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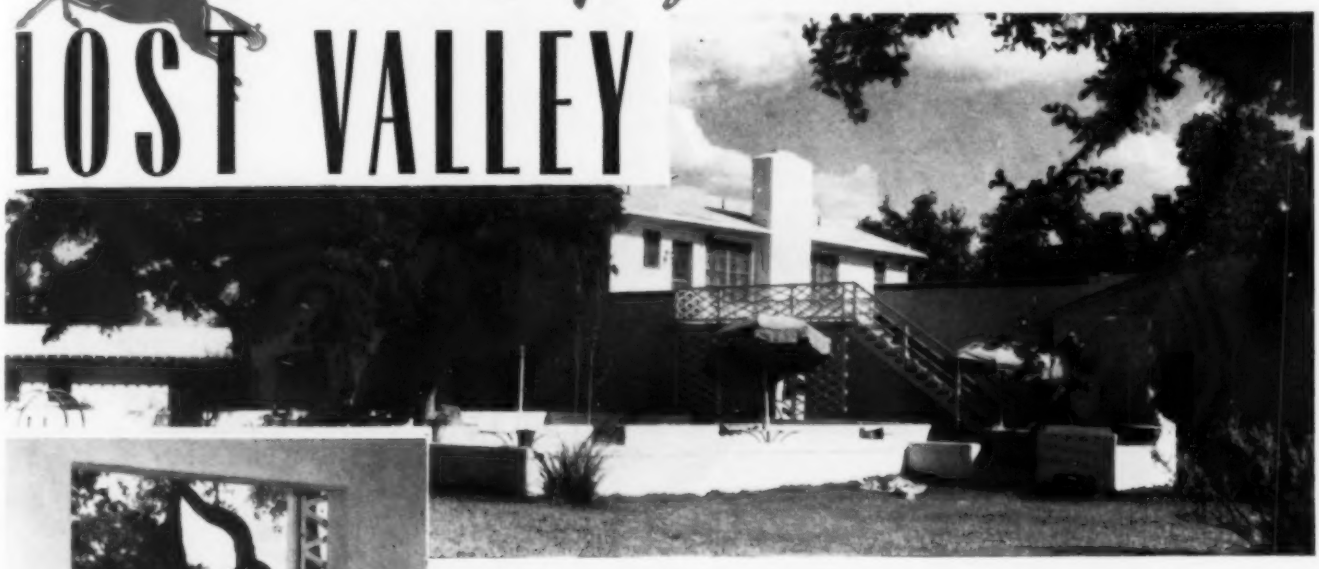
NOV 10 1947

The Flying Red Horse Serves LOST VALLEY



LOST VALLEY RANCH, magnificently located near Bandera in the beautiful hill country of Texas, 38 miles from San Antonio, is an unusual combination of de luxe resort hotel and typical Southwestern ranch. Guests may enjoy the finest in luxurious combinations, including an excellent golf course and swimming pool. Shown at left and reading from the left is Mike Robinson, Managing director of Lost Valley Ranch; N. W. Alexander, Aviation Department of Magnolia, and T. H. Beazley, Assistant Manager, San Antonio District of Magnolia, as they discuss final improvements for the landing field at Lost Valley Ranch, which includes Mobilgas and Mobiloil service.

and Drops in to See Genial CHARLIE WILSON

at HIGHLAND FLYING SERVICE at Highland Park Airport, Dallas. Charlie is a veteran flyer who has trained many a student pilot and is still at it, employing the genial patience and skill that has given him an enviable reputation in the flying business. In the photo at right, Charlie Wilson holds a can of Mobiloil in his hand as he orders more from W. B. Rew, at left, Marketing Manager of Magnolia, who called in his plane, "Floogie."

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Tennessee—Nashville
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Hughes Aircraft Sales
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FORT WORTH, TEXAS

OCTOBER, 1947 VOL. XXVIII, NO. 4

Southern FLIGHT

Including MODERN AIRPORTS

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AIR Report

SIGNIFICANT TRENDS IN THE NEWS

New Stinson Features

Although it will not be formally announced until November, the improved 165-hp. Stinson for 1948 will feature a wider and more comfortable cabin, more baggage space, a larger vertical stabilizer and a single-strut wing.

Ryan Improvements in Navion

Color will be emphasized in new Navions assembled by Ryan, first of which were scheduled to go to a new distributor-dealer organization early in October. Ryan believes airplane paint jobs are as important to all-metal sales as in automobile market. Improvements include better interior finishing.

New Fairchild Prototype

No. 2 flying prototype of Fairchild's 4-place, 165-hp. Model 47 is nearing completion at the Winfield, Kansas, factory and will continue testing interrupted by loss of No. 1 prototype recently when the test pilot jumped at 3,000 ft. Model 47 is in the Bonanza category and is said to offer excellent possibilities.

Downtown Airmarking

Airmarkers for private fliers are a major requirement for more cross-country flying and all markers possible are needed, but success of Skyway No. 1 program is doubtful as long as it leaves bulk of work up to local chambers of commerce. A few such chambers, notably Kansas City's, have accomplished much for aviation in past, but such groups too often become satisfied with initial ballyhoo and drop further interest. Private fliers organized in breakfast flights and directed by airport managers have done a wonderful job in some places with airmarkers, especially Florida. Skyway No. 1 promoters will miss a good opportunity if they don't work more closely with small airports and operators.

Luscombe 4-Place Pushed

Cooling difficulties with the Silvaire Sedan's 165-hp. Continental were said to have been satisfactorily solved last month, expediting efforts to license the model. Luscombe has reduced the size of the oil cooler scoop. One of several experimental Sedans left Dallas late in October for Washington, New York and Minneapolis demonstrations. Frank B. Chapman, assistant preliminary design engineer, has succeeded Harold R. (Bob) Burns as Luscombe's chief test pilot following Burns' resignation to represent a consultant engineering service. Chapman played an important part in the 4-place design work. ★ ★ ★

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Just among ourselves

EDITORIALS

SOMETHING TO CROW ABOUT

IF the people who presumably are engaged in selling aviation to the American public would quit selling aviation short, we doubt very much if present doldrums would long prevail. We've hammered on that theme so long and so loud we'll probably be accused of having a one-track mind. At the risk of such an accusation, we bring the subject up again.

Instead of harping on the old familiar line, which indicts the entire industry for the foisting by a few profit grabbers of 1930-40 airplanes on the 1947 market, why not give deserved recognition to the progressive manufacturers who are actually providing distributors and dealers with something new, something efficient, something practical? While deploring the lack of creative engineering and modern manufacturing technique, we would like to give recognition and encouragement to those who have made it possible for thousands of dealers and distributors to offer good, authentic merchandise and service. Never before have they been able to provide so much in the way of airplane values for so little money. Those with little or nothing of value to offer have folded or face inevitable failure unless they wake up and deliver the right kind of merchandise—and soon.

All one has to do is to compare the best of the 1941 models with the outstanding 1947 designs in use today. And you can make the comparison on any basis: original price, comfort, utility, performance, economy of operation and maintenance, dependability, eye appeal, improved engines, propellers, radios and all other accessories.

On top of that, deserving personal plane manufacturers have solved one of the most serious problems and headaches of the prewar days—that of finding and correcting deficiencies in their designs before bad accidents occur and well before the rumor mongers have had a chance to blaspheme a good airplane out of existence just because of some shortcoming which shows up only after rigorous hours of use in the field under all flight conditions.

There are numerous companies who deserve commendation in this regard, especially Continental Motors, North American Aviation (original builders of the Navion, now to be manufactured by Ryan Aeronautical) and Beech Aircraft.

Of all the companies who were automatically put on the spot when the war ended, about the most prominent was Continental, who was called upon to furnish ninety per cent of all engines for personal aircraft. It was especially tough due to the backlog of orders. When certain Continental subcontractors fell down, the engine maker was forced to superimpose a modification job on thousands of engines while trying to satisfy the needs of the personal plane makers who had additional thousands of orders on their books and couldn't deliver airplanes fast enough. Continental handled that herculean service task in an eminently satisfactory manner and in record time, with the least possible discomfort and irritation to the owners.

A serious deficiency developed in the Navion's hydraulic system shortly after quite a few airplanes had been delivered to private owners. North American caught the trouble, advised the owners, the aviation press and the industry, and modified every airplane at no cost to the owner.

Similarly, Beech recently discovered the roll-welded skins used on some Bonanzas were not standing up as well as the riveted skins. A few minor cracks were beginning to show up at periodic inspection, creating a latent defect which might have caused trouble later on. The approximately 250 airplanes which have the roll-welded skins will now be brought back to the factory and modified at no cost to the owners. So another *future* potential source of trouble has been eliminated before failure in the field, and, just as important, before the carrion crows sitting on the airport fences have an opportunity to pick an airplane to pieces with damaging rumors.

Fortunate indeed is the personal airplane owner today compared to the neglected owner of prewar years, who not only had to take what was given him at the time of purchase, but often had to pay for troubles that developed through no fault of his own.

"Let the buyer beware" is now applicable only to beat-up second hand airplanes and especially to the military surplus junk, which has done more to injure legitimate aviation than any other one factor.

Today's progressive personal plane manufacturers are displaying a new consciousness toward the customer's welfare, a new pride in their product and a new understanding of enlightened service policies. So we can't get too bearish over the future of personal flying. The principal handicap now seems to be a pitiful shortage of people who know how to sell good merchandise. If we can, during the next few months, get rid of the order takers and replace them with salesmen, wipe out the rumor mongers and replace them with enlightened airport business men, we can look forward to a return of healthy sales and wider use of personal airplanes in the Spring of 1948.

With corporate earnings and employment higher than in all history, with practically every technical factor so much better and more favorable to wider adaptation of aviation in our national economy, it is indeed enigmatic that personal plane sales aren't skyrocketing like nearly everything else. Could it be that aviation people must now blame their own shortcomings for the slow market instead of placing the blame on other factors as they always have done in the past?

THE NATIONAL AIR RACES

FROM an industry standpoint, the Goodyear Trophy Race for original designs of 190 cubic inch displacement saved the 1947 National Air Races from mediocrity. It is difficult

(Continued on page 44)

The Birdmen's Perch

By *Major Al Williams*, ALIAS, "TATTERED WING TIPS,"
Gulf Aviation Products Manager, Gulf Bldg., Pittsburgh 30, Pa.

Sometimes we read the papers.

Sometimes we read a book.

But always we read the flying mags.

We love 'em and are certain that if we could remember everything we'd ever read in them, we'd be a genius.

One thing we do remember was a picture of an F-8-F.

The caption said that she took off in 115 feet!

The caption also said that she climbed to 10,000 feet in 100 seconds!

We can only add (a little weakly) that this is the kind of a plane we've been begging them to build for years.

NO NOISE IS GOOD NOISE

Start out with a good airplane.

Put a 5-blade prop (at 1,000 rpm instead of 2,500 rpm) on the nose and you eliminate a lot of noise while increasing propeller efficiency.

Now add an engine muffler—the way NACA has done—and you get rid of so much unpleasant noise that it is scarcely believable!

Start out with a good crude oil.

Refine it with orthodox refining technique and you eliminate a lot of impurities while increasing lubrication efficiency.

Now add another refining step—the Alchlor process—the way Gulf has done—and you get rid of so much additional trouble-making hydro-carbons (the kind that break down into sludge, carbon and varnish) that it is scarcely believable.

In fact, we lose as much as 15% of the volume of the already refined oil we

started with, in the Alchlor process.

But what's left — Gulfpride Oil — has gained that much in lubrication efficiency in the most important engine in the world—*your* engine.

Are you sure your engine's been serviced with Gulfpride lately?

Better check.

LITTLE KNOWN FACTS DEPT.

You oughtta know the rules by now!

You send us a "Little Known Fact About Well Known Planes" (that's why we've got our address on the top of the page) . . . you also send us proof of your "Fact" . . . and if we use it in these hallowed columns, you get commissioned as a Perch Pilot (bottom rung). After

we've used 5 of your "Facts," you get promoted to Senior Perch Pilot!

Exciting, isn't it?

James B. Misner, of Sandusky, O. gets a commission this month because:

"The new super-transports generate enough electricity to light a small town, or to operate a large broadcasting station!"

Charles Ripley, N.Y.C., gets a commission because his firm of aviation insurance underwriters (isn't it the biggest in the country, Rip?):

". . . had fewer payments to make for crashes than they did for windstorm losses in April!"

Okay, now *you* send in *your* Fact!

Gulf Oil Corporation and Gulf Refining Company . . . makers of

GULF **GULF AVIATION PRODUCTS**

FORM THE SAFETY HABIT OF AUTOMATICALLY CHECKING GAS GAUGE···
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Magnesyn*—is the name that is providing more and more answers to remote indication problems. Rapidly gaining momentum as an essential on today's skyliners, Magnesyn remote indicating instruments are now available for important engine functions as well as position indication. Their light weight (averaging 40% weight saving over earlier remote indicating systems) and rugged construction (shockmounting is unnecessary in most installations) guarantee simplified installations and long service life. Because they have fewer parts, they have added assurance of an extended service life and extra maintenance economy. For dependable remote indication, specify Magnesyn instrumentation.

*REGISTERED TRADE MARK OF THE BENDIX AVIATION CORPORATION

Eclipse-Pioneer DIVISION OF Bendix AVIATION CORPORATION

TETERBORO, NEW JERSEY

STANDARD OIL COMPANY
(NEW JERSEY)
Equips New DC-3 with IRVIN Chair Chutes

● To make flying safer for company executives, other passengers and crew members, Standard Oil Company (New Jersey) has equipped its new Douglas DC-3 with Irvin Custom-Built *Chair* Chutes. Earlier in the year, the company equipped its Beechcraft and Lockheed aircraft with these same Air Chutes. The Standard Oil Company (New Jersey) and many other prominent plane owners know that Air Chutes serve the same purpose on aircraft as lifebelts on an ocean liner. These plane owners are doing the obvious, sensible thing by equipping their planes with Custom-Built *Chair* Chutes.

Interior of the new Douglas DC-3 owned by Standard Oil Company (New Jersey) showing the Irvin Custom-Built *Chair* Chute installation. A chute is fitted into the back of each seat . . . combines beauty, convenience and comfort . . . is not worn normally but is instantly available in an emergency. Write to Irving Air Chute for complete details.

FEEL SAFER . . . BE SAFER . . .
with Irvin Custom-Built Chair Chutes

There are now over 35,000 registered members of the Caterpillar Club. Should you qualify, please write us.

IRVIN Air Chute
The Life Preserver of the Air

IRVING AIR CHUTE CO., INC.
1674 JEFFERSON AVENUE, BUFFALO 8, NEW YORK

Southwest Parachute Co., Leon McKennon, Pres.
4347 Lovers Lane, Dallas, Texas

SIZE: Four-place, roomy cabin, adequate luggage, low-wing, possibly a pusher, tricycle gear, unrestricted pilot view, about 200 hp., 1,550 to 1,800-lb. empty wt., 2,500 to 3,000-lb. gross—Wright. (Navion comes nearest to these requirements, is roomiest personal plane in its class.)

SPEED: I place this important item at 150 mph. (cruising), which is three to five times the auto's cross-country speed. Other requirements: 45-mph. stall, 40-mph. landing speed, 500-fpm. rate of climb—Wright. (Beech Bonanza exceeds everything here except stall, which is slightly higher.)

SAFETY, FLYING EASE: Minimum of 500-fpm. rate of climb should be achieved for safety. Next is need of care in obtaining positive static, dynamic stability to require less attention to controls and make for ease of flying —Wright. (Luscombe Silvaire Sedan is outstanding in these qualities.)

CAA Administrator T. P. Wright reaffirms his prediction of 400,000 *personal planes by* 1955.

THE FUTURE OF PERSONAL AIR C

IN May, 1945, I ventured a forecast that by 1955, or thereabouts, there would be 400,000 registered civil aircraft in the United States, with an annual production at that time of personal aircraft of the order of 150,000.

I see no reason two years later to change this long-range estimate.

At present, personal aircraft cannot be considered as having sufficient overall merit to warrant the size of market forecast for 1955. Actually, over one-third of all planes of 1946 manufacture were sold for training purposes.

A statistical survey indicates the factors for discontinuance of ownership and disappointment of aircraft buyers after a relatively short time, as follows: Financial reasons 55 per cent, reasons relating to airports 10 per cent, general lack of utility 10 per cent, danger 5 per cent, over-regulation 5 per cent, and all other causes 15 per cent.

Economics

Under financial reasons, most important in disposals, are both initial price and operating costs. Let us consider the subject of economics, involving fundamental principles of demand and supply.

Demand is made up of three factors, (1) want, (2) will to spend, (3) ability to pay.

There is a fundamental desire to possess an aircraft on the part of an ever-increasing number of people. However, 1946 sales were a little out of scale with the real average want; there was a great, pent-up demand from the war and 1946 sales took off the cream of the market. To increase the number of people who will satisfy their desire to own and fly a personal aircraft, the utility of the aircraft must be increased in all its elements, immediately and continuously thereafter.

In order that there may be a "will to spend" on the part of a larger number of people, utility must be substantially better than we have at present. To the basic and somewhat romantic desire to fly must be added a practical, utilitarian usefulness. Once having achieved this, together with "ability to pay," we need have no concern over "will to spend."

It seems that the ability to pay will only be satisfied with a considerable reduction in present prices of 4-place planes. I believe that at a figure that would lie between $4,400 and $5,400, the market forecast for 1955 can be reached insofar as price is concerned. For such a plane today one must pay about $7,900. (Ed. Note: Mr. Wright doesn't identify it but apparently is referring to the Beech Bonanza, now priced at $8,945.)

I believe that by careful designing, production cost can be reduced by about 12 per cent, which is made up of 20 per cent reduction on the basis of improved design-for-production of the present aircraft structure, partially counter-balanced by an 8 per cent increase in cost incident to some added complication and added devices which the public will demand in order to obtain proper utility.

Next there is the all-important reduction in cost incident to increase in production quantities. In a 1939 study, curves were developed to show that labor costs will be reduced by 20 per cent each time production quantity is doubled. This is the so-called 80 per cent curve rule. Corresponding cost-production curves for other factors of cost apply as follows: Raw materials 95 per cent, purchased parts 90 per cent, and finally, a total cost and sales price (allowing for the appropriate proportion that each of the above three factors bears to the total when varying quantity) at 85 to 90 per cent, with a value in the production quantity region of 87 per cent.

It is anticipated that personal aircraft output by the average firm will increase slightly more than five-fold between now and 1955, which, when applying the above formula for cost variation, would mean a price reduc-

Action Needed

Whether one agrees with Mr. Wright or not, there is urgent need for personal aircraft improvements if wider utilization by the public is to be accomplished. Too much emphasis has been and is still placed on light-plane production and not enough effort is going into personal aircraft engineering. The value in Mr. Wright's accompanying statements is not so much his predictions or even his suggested improvements. It is his willingness to apply study and research to the subject and his courage to express himself in constructive criticism. His appraisal was adapted from material he presented last month in London at the Anglo-American Conference under joint auspices of the Royal Aeronautical Society and the Institute of Aeronautical Sciences.

—THE EDITORS.

FOLDING WINGS AND TAIL SURFACES as demonstrated on Convair's new L-13 for the Army point the way to hanger economies. Administrator Wright doubts the practical worth of folding wings on roadable aircraft, however. He envisions a flying auto with complete removable flight surfaces, propeller and flight engine as offering most efficiency. Convair L-13's folding features were required by Army to facilitate loading of the craft onto trucks. Main wheels are on spindles which can be turned inside to narrow the tread for truck loading also. Army's first all-metal liaison airplane, the L-13, is in production at San Diego.

IRCRAFT

An Appraisal

By T. P. WRIGHT,

CAA Administrator

tion of about 30 per cent. Combining this with the 12 per cent reduction incident to improved design simplicity leads to the conclusion that the final price of personal aircraft of eight years hence can be about 62 per cent of present cost—and with a great deal of value in utility added.

At the present, aircraft of the type we are discussing are priced at about $7,900. Assuming an airframe weight of about 1,100 lbs., the unit price is $7.20 per lb. of airframe weight. Sixty-two per cent of that figure is $4.45 which, multiplied by 1,100 lbs., gives a price of $4,900 that, on the premises herein assumed, may be anticipated in 1955. (Incidentally, the 1947 manufacturing cost index in the U.S. is somewhat more than 65 per cent above that for 1939; therefore, if the index should drop to 1939 levels by 1955, our personal aircraft would then cost about $3,000. On the other hand, of course, if the index rises, an increased cost will result.)

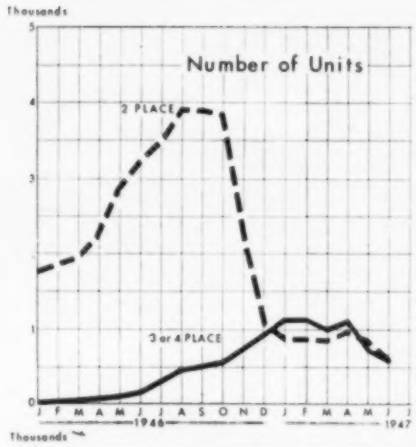
Commensurate reductions in operating costs will result because of the following reasons:

Depreciation, forming 26 per cent of the total, will automatically drop with initial sales price reduction and increased life from improved design. Insurance costs also will be reduced substantially, incident to reduced cost of the item insured, to improved safety records and other factors. Hangar rent will be lowered by design innovations such as folding or removable wings. Maintenance and repair costs will be reduced by design improvements and by some reduction in spare parts costs. Fuel and oil may remain constant.

At present the cost of one year's operation is approximately one-half of initial price. I believe this can be reduced to one-quarter by 1955.

I do not hesitate to forecast that the

(Continued on page 45)



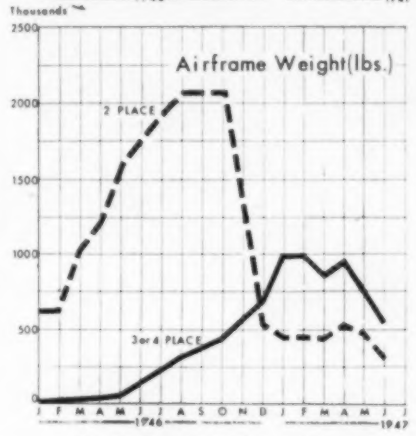


Fig. II. Personal Plane Shipments.

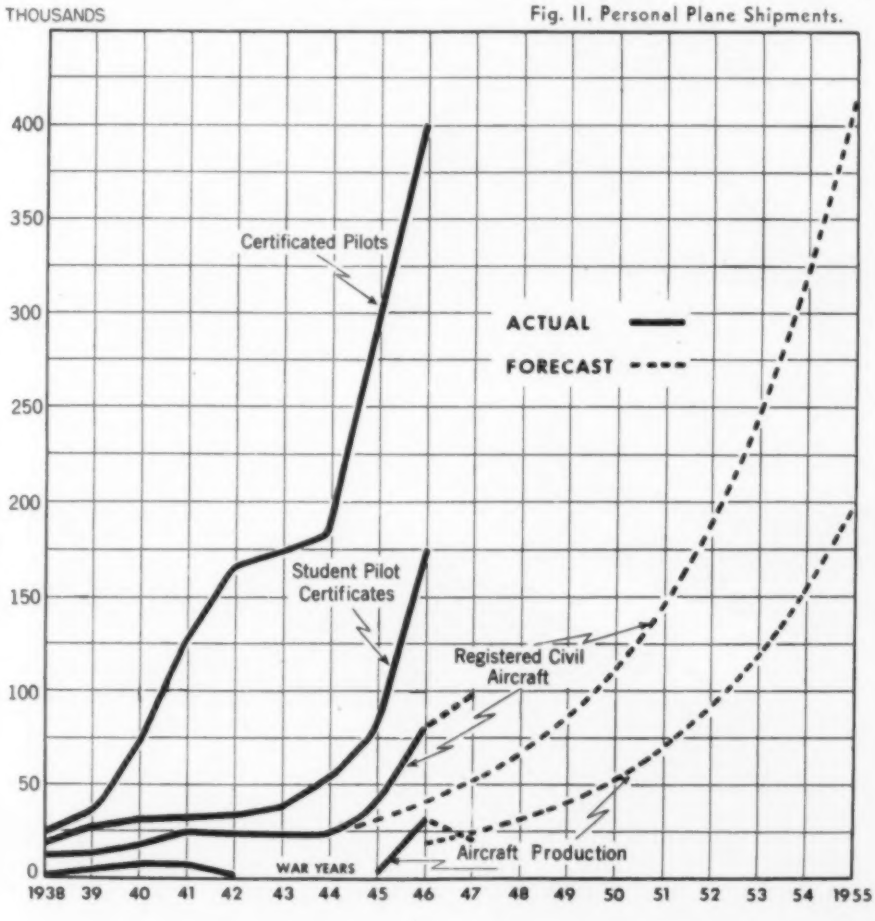
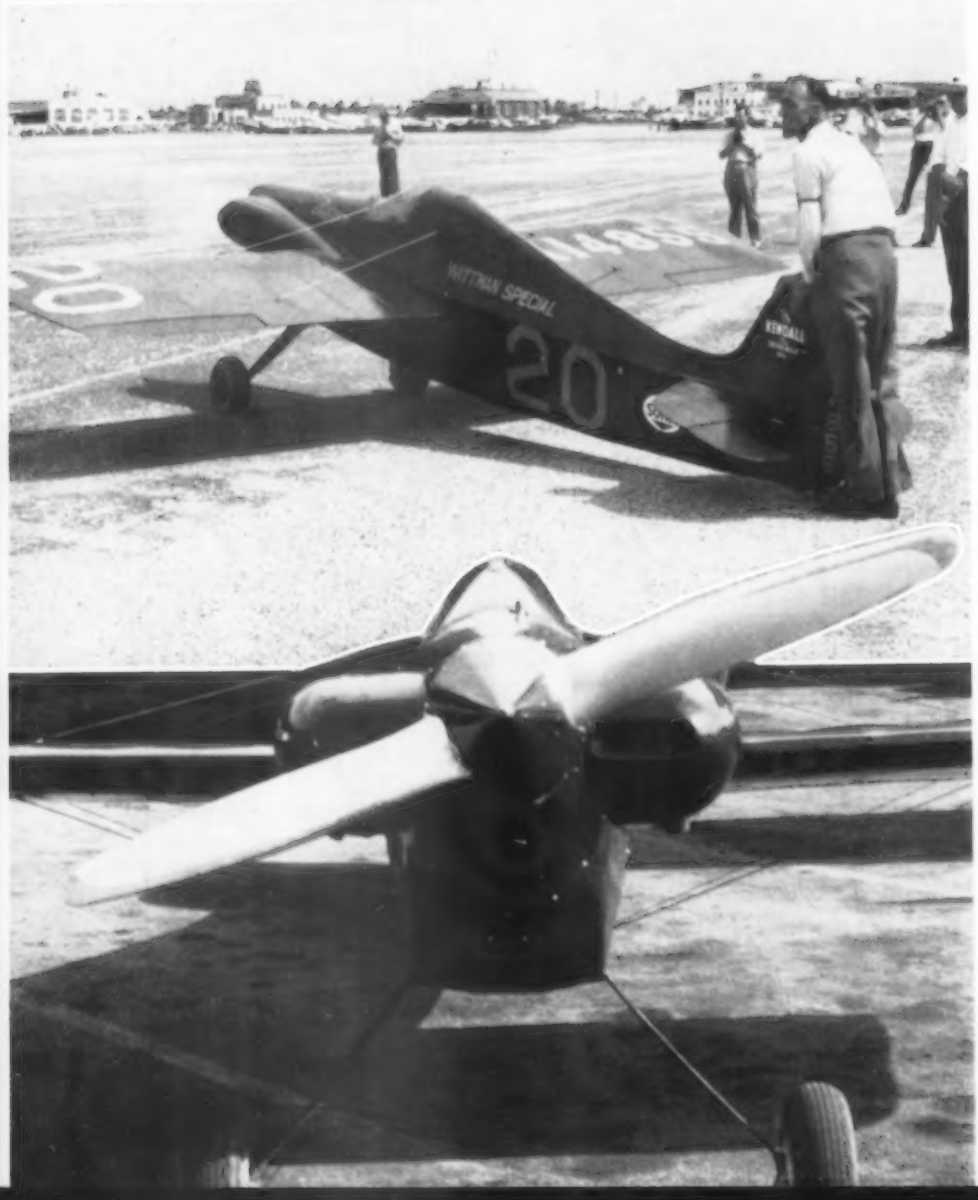


Fig. I (right). Civil aircraft and pilot registrations as charted by the Civil Aeronautics Administration to compare actual figures and Mr. Wright's forecast.



Opport for Ra

By TOM ASHLEY

SURPLUS clunkers with outsized power plants won the headlines — with accidents as well as new speed marks — at the 1947 National Air Races but a lot of spectators gave top honors to 85-hp. backyard designs which inaugurated the new Goodyear Trophy event.

Any significance found in the program, still the biggest and busiest air show anywhere, can be credited to the Goodyear event for individual designs with engines of 190-cu. in. displacement. They proved to many that it is just as thrilling to watch 166-mph. racers as it is to wince at widely-separated 396-mph. fighters: (1) Short-course pylons are closer together while the fighters make but a single pylon in view of the stands, (2) skill determines more in the slower and evenly-matched racers, (3) individual design efficiency has more meaning to spectators and participants alike but is almost totally ignored in surplus fighters whose designers and builders are without responsibility or stakes, (4) safety is on the side of civilian designs both for spectators (outside the stands, particularly) and participants because of more rigid requirements and practical design limitations, and (5) surplus fighter performance offers nothing new or unusual of value but commercial aviation stands to benefit indirectly when individual design improvements enter spirited competition.

Interest in the 1947 Goodyear entries snowballed during and after the races, especially among designers, mechanics, pilots and show sponsors. The latter includes organizations in Miami, which immediately scheduled a large purse event for Goodyear class planes as an added feature of the All American Air Maneuvers, January 9-11; in Dallas, where two Goodyear class events may be staged this winter, and on the West

Winner of Goodyear Trophy, Steve Wittman's 85-hp. "Buster" from Oshkosh, Wis., is a modified 1937 racer with wire-braced mid-wing, pressure cooling. Its winning speed was 165.857 mph. Wittman is shown holding tail (third from top). Span 16 ft., length 17 ft., wing area 67 sq. ft., gross weight under 800 lbs.
(SOUTHERN FLIGHT Photos by Hans Groenhoff and Staff.)

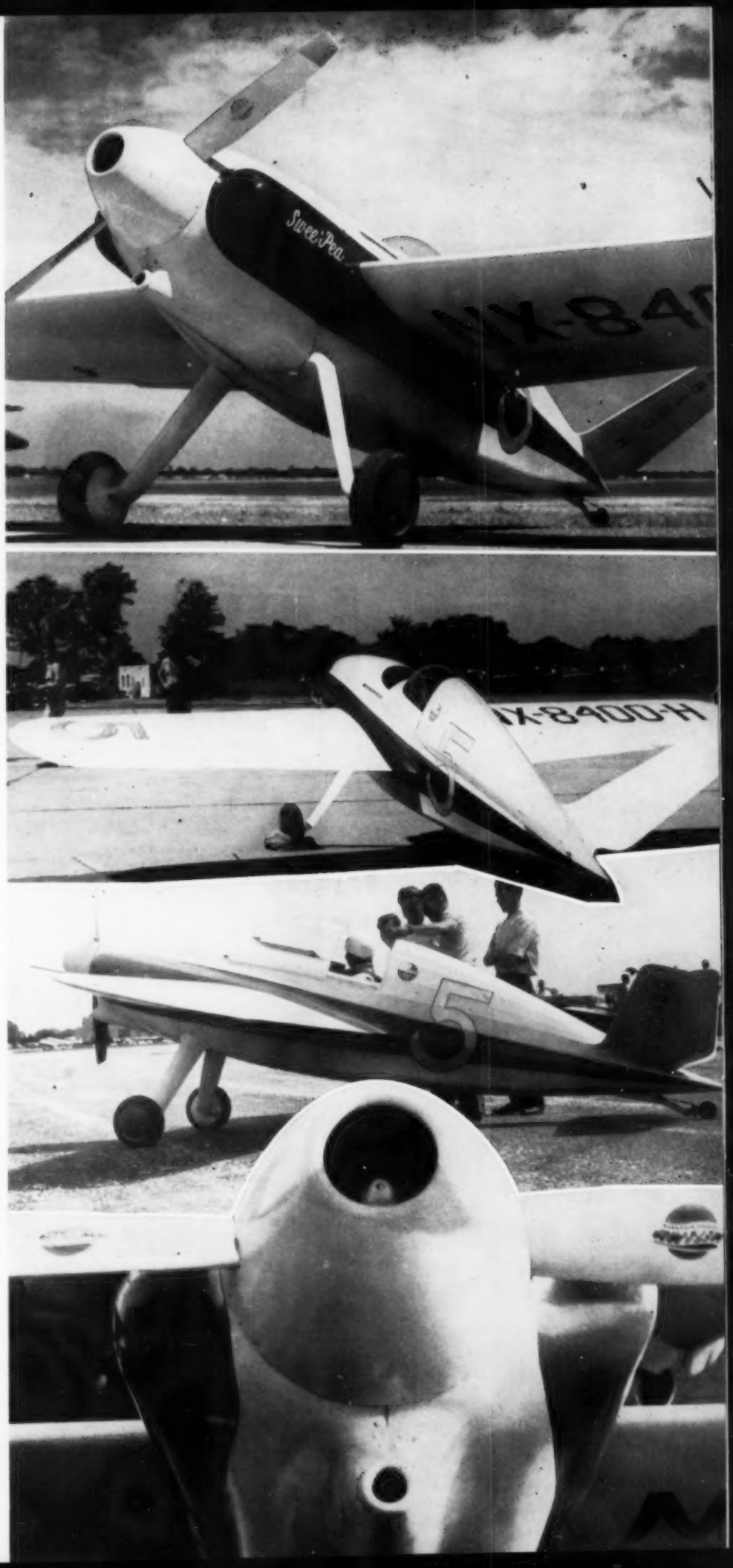
rtunity
Racing

Coast, where several events are being talked. The Cleveland purse of $25,000 included $8,500 to the winner; if similar cash is posted at several events in the South and West, total cash available on such a circuit would accelerate backyard design improvements in large volume. All of which creates a sizeable aviation opportunity for many participants.

Those interested in such an opportunity will find much to study in the accompanying photographs of outstanding designs at the 1947 Goodyear competition. Improvements and modifications to these designs now under way and soon to be made are more important than the originals — lessons were learned in Cleveland and performance there stands to be boosted considerably in coming events.

"Buster," the winner, is a pre-war tube and fabric racer modified by Steve Wittman, Oshkosh, Wis., long-time racing pilot and designer, who patented the steel-spring landing gear later popularized by Cessna and used on many of the Goodyear racers. Its thin (NACA 0009) wing of fabric-covered wood construction is mounted on the thrust line and the engine's pressure cowling is faired into the wing-fuselage intersection, loosing the exhaust below the wing in the low-pressure area. "Buster" still has wire-braced wings. It grossed under 800 lbs., with a 67-sq. ft. wing area.

Art Chester's "Swee' Pea" was acclaimed as the most beautiful entry from an aerodynamic standpoint, with its highly-finished details, novel V tail and ducted fan. First of three new racers Chester is building, "Swee' Pea" weighs only 520 lbs. empty, has a 70-sq. ft. wing area. Its fast wing has a laminar flow section with low drag and steady center of pressure, although providing a generous depth of spars for cantilever construction. Perhaps the cleanest racer of all, its outstanding feature is its ducted-fan engine cooling system. Its only opening is in



Second place at 165.482 mph., Art Chester's "Swee' Pea" from Los Angeles introduced V tail, ducted fan. Note magnesium spinner and fan (bottom), small carburetor air scoop, shortened McCauley prop. Span 18 ft. 6 in., length 15 ft. 4 in., wing area 70 sq. ft., empty weight 520 lbs.
(SOUTHERN FLIGHT Photos by Hans Groenhoff and Staff.)

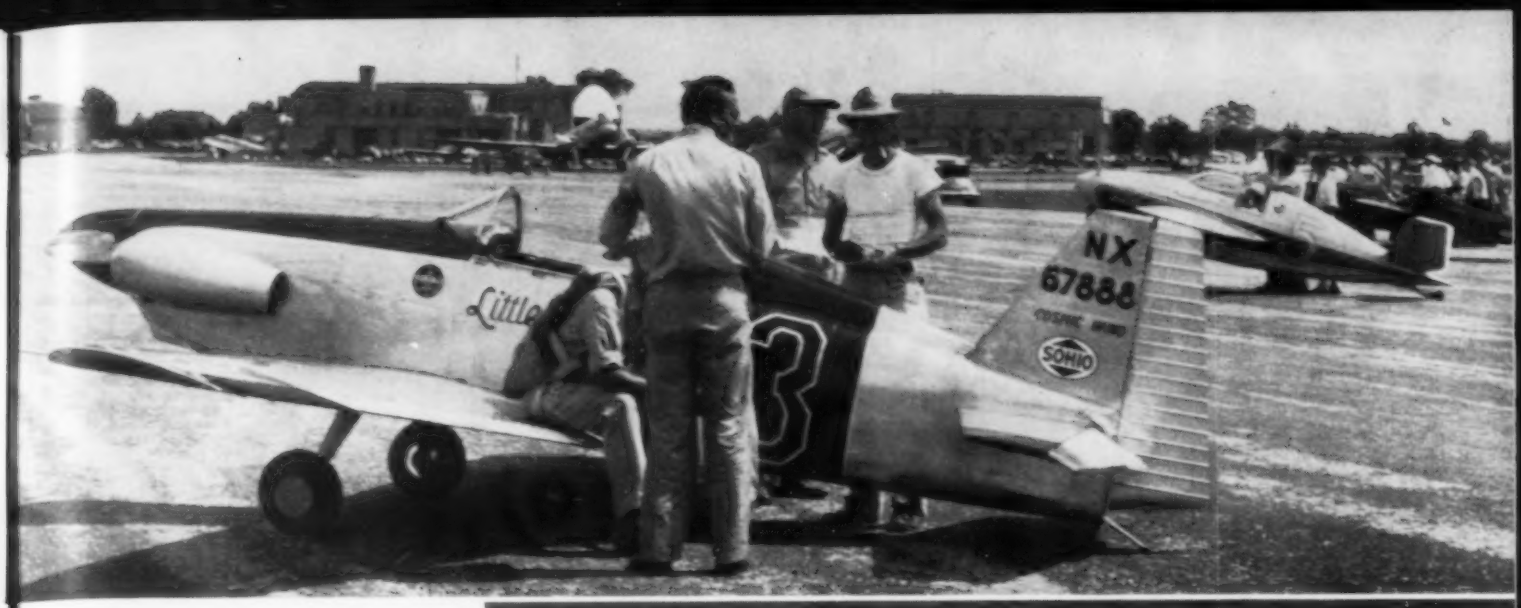
Ed Allenbaugh of Hollywood had thinnest Cantilever wing in race on No. 95, with fibreglass fuselage. Wing has modified NACA 2306 section with only 5½ per cent thickness. Sawed off prop failed to increase speed. Flight silhouette shows plan form. Span and length 18 ft., wing area 72 sq. ft.
(SOUTHERN FLIGHT Photos by Hans Groenhoff.)

an outsized propeller spinner. The leading edge of this opening is an airfoil section formed by an inner and outer shell. Inside is a magnesium casting, providing a base for a smaller spinner over the propeller hub. It has four vanes of airfoil section extending fanwise and supporting the outer shell. These vanes, although unnecessary at high speed because of ram, serve with the propeller blades to force cooling air across the cylinders when on the ground and taxiing. Expulson of air from the hot side is facilitated by the exhaust outlet's location in the duct leading to a point below the wing. "It proved very effective," Chester commented.

Describing his V tail, which is different from the Beech Bonanza's, Chester said he was doubtful of its efficiency but that it turned out "completely satisfactory." He explained: "Being unable to get much data and having heard some comment as to the lack of directional stability of this type, I used a slightly higher angle on the surfaces and generous areas. The only change necessary was to reduce the ratio between stick and flippers to lessen the sensitivity of the elevators. I feel there is a definite reduction in drag in the V tail, which is lighter and simpler to make." "Swee' Pea" is of fabric-covered, welded tube construction, with plywood covered wing.

Only all-metal entries were LeVier Associates' "Cosmic Wind" and "Little Toni," from Van Nuys, Calif., which placed third and fourth, respectively. Only slightly slower than the winners, they are low-wings but need refinements in propeller design, cowling, canopy, filleting (LeVier, chief engineering test pilot at Lockheed, said there was insufficient time before the race for these improvements). Both are almost identical but the one flown by Herman (Fish) Salmon, a Lockheed test pilot who took off from flying the huge Navy Constitution to make the races, is faster. Fish turned his Continental 3,200 to 3,300 rpms. to take about 93 hp. out of it (fuel consumption 8 gph.). Finishing third in the finals with an official speed of

Black "PFttt" was flown by Mike Argandar of Los Angeles, won $135. Charles Bing of Lynchburg, Va., won $700 in No. 70. Squattish No. 89, flown by Bill Falck, Warwick, N. Y., is 16-yr.-old Art Chester Jeep with Super Cruiser cowl, won $1,050.
(SOUTHERN FLIGHT Photos by Staff.)



158.840 mph., he pulled it up in a victory roll, later said its rate of roll compares with that of the P-80.

LeVier described the racer's excellent stall as one of its best features. "It is equally good or better than that of most lightplanes," he said. "Wing tips never completely stall. Pilot has full control with stick back, either ailerons or rudder. Its accelerated stall is much like that of the P-38 or P-80, which is considered excellent."

As for the Goodyear running itself, only 8 mph. separated Steve Wittman's 165.857 mph. which won first place from Tony LeVier's fourth-place 157.883 mph. for 15 laps around the

(Continued on page 35)

Tony LeVier's all-metal racers, placing third and fourth, were outstanding. That's LeVier at right in helmet. Note long ailerons (lower right), excellent visibility over nose. Span 19 ft., length 17 ft., wing area 68 sq. ft., empty wt. 523 lbs., stall speed 65 mph., top speed 180 mph. Two LeVier racers won total of $5,700 in Goodyear.

(SOUTHERN FLIGHT Photos by Hans Groenhoff, except top by Staff.)

An Old-Timer's Analysis

What's Wrong With Aviation

By ROGER Q. WILLIAMS

Note—The author, who taught himself to fly in 1916, flew from Rome to New York in 41 hours in 1929 during the heydey of trans-Atlantic flying; conducted a national aviation missionary tour of the nation during the 30's and was a Colonel in ATC arctic operations for three years during World War II. More recently he authored "Up Currents," a book of aviation horse sense. He resides in Torrance, California.

THE major fault with aviation is the people in it. Contributing factors to the current deplorable situation are many. But analyzing them one always returns to the weaknesses of the people involved. Personal shortcomings are at the root of factory failures, operator bankruptcies and most aviation misfortunes.

For one thing, the glittering attraction of War Assets-slashed prices for surplus aircraft raised the hopes of thousands of ex-servicemen. Goaded on by easy credit, GI loans and the cash of friends, they gobbled up as many surplus airplanes as their cash and credit would stand.

Failure Without Faith

The future looked rosy until the cash ran dry and things got tough. To add to their woes, the banks seized many aircraft and resold them at such a ridiculously low figure that those who still retained their planes found their assets had been forced to a distressing low.

I talked to two ex-GI's on the Lomita Flight Strip in California over the weekend. Their sad plight is typical of thousands of others. They bought two twin-engine Cessnas and a T-Craft on speculation. When the bottom fell out of the market they tried to sell rides and give instructions at cut rates. Lacking business acumen they failed in this attempt. Today they possess the same three airplanes. The Cessnas are grounded for wing repairs with no cash to accomplish the work to make them revenue-producing. A personal property tax was slapped on these grounded aircraft to the tune of $250. On top of this the banks are pressing for the last two installments. The sad end of this venture is clearly in sight with the banks hitting the jackpot.

Another instance on the same airport is that of an ex-captain in the Air Force who bought 11 trainers and spent a lot of money to rebuild them. He set a fair price of $2,200 on each. Some quick-turn-over operators in the territory badly undersold his price. This fellow reduced his price. But competition did likewise for quick sales. Then to top it all off the Bank of America stepped in to repossess a similiar airplane and peddled it for the unpaid balance of only $650 — half down and the remainder on terms.

At still another airport I met an operator who was distasteful to me from the start in spite of the fact that I have rigidly schooled myself to keep an open mind on such matters. As I suspected, this fellow was a chiseler. His instructors were receiving fifty cents per hour less than others elsewhere. He even chiseled ferry pilots out of an honest wage for delivering his new planes from the factory.

I thought I could straighten him out by pointing out that he was losing revenue by not pushing small sales of merchandise he had on display. To prove this was possible, I got him to bottle up his ego long enough for me to sell more than a half dozen small articles right under his nose. "Peanuts!," he said, "why should I push the other guy's product when I have them on consignment?" Can you beat that for selfishness?

How Not To Sell

Now, let's turn to what I discovered in the field of sales. Last week I rode along with a salesman who was to interview a prospect. When we arrived at the airport to contact this prospect, a competitive airplane in about the same price class was parked within a stone's throw of our demonstrator.

The prospect arrived. The salesman went over the fine points of the airplane he was trying to sell. He gave the prospect a cockpit check and a flight. When they returned to the airport the prospect spotted the competitive airplane and asked a few questions to satisfy his curiosity about competitive advantages.

Within a few minutes I counted eleven nasty cracks about the competitive airplane from the salesman and not one remark about his own product. In fact, the latter was so entirely forgotten that the prospect walked over to get a better view of the competitive airplane.

The salesman for the competitive airplane stood by in wise silence. I saw that he made a note of the prospect's license number on his car. When the prospect walked in indecision to his car with the original salesman on his heels pressing for an order, the competitive salesman just smiled to himself. It's a safe bet that he followed up that lead and made a sale, for that prospect was a good business man with a keen sense of fairness for his competitors.

Tearing down one's own house along with that of your neighbors is something that folks in aviation must learn to overcome, if they hope to last in aviation.

History Repeats

At another airport I had been observing for many weeks, I checked the quantity of gasoline sold in January, March and May. To my surprise it was decreasing although the same airplanes were parked about the field.

The gas truck attendant told me that the reason was due to most of the airplane owners being unable to pay for their flying time. When I pressed him for an answer, he grinned and replied: "It's only history of 1931 repeating itself. When those guys want to fly they invite a friend to go along who buys a tank full of gasoline from me. They give the friend a short hop and save the rest of the gasoline to instruct students on the QT. The CAA knows this is going on but cannot get such students to squeal on a friend.

This sort of evil not only endangers the lives of the pilot and student but it robs the legitimate schools of a fair share of the business.

I talked to a flight director of a school that was just starting up. He was pretty much discouraged by lack of students for his GI program. "What are you doing to get students?," I inquired casually. "Waiting for them to sign up," he remarked without enthusiasm, then added as an afterthought, "Oh, yes! We are offering anybody who brings in a student $10 for each student."

"Have you checked with the VA, the CAA, the various veterans posts about town for prospects?," I pressed.

"That won't do any good," he complained. "I did bump into a group of ex-GI's on a street corner who should have been out flying at another school. Instead they were hanging around that

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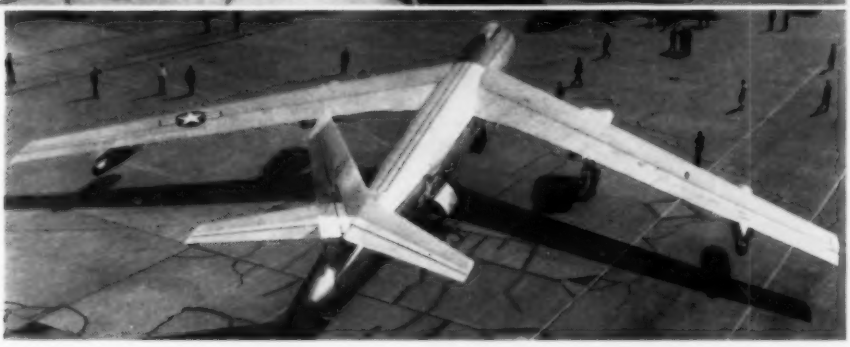

Design for Jet

Sharp sweepback of Boeing XB-47 wings and tail surfaces is shown in these first photos. Thin wings necessitated strut-installed nacelles, tandem gear carried in fuselage. Stratojet approaches B-29 in size, is in 600-700-mph. category.
—(Boeing Photos.)

A RETURN to faster bomber speeds over fighters appears closer now that the latest of the Air Force's new jet bombers—the six-engine Boeing XB-47 Stratojet—is ready for flight at Seattle. The thin, swept-back, laminar-flow wing of the Boeing design suggests that it is intended for speeds close to 700 mph. and that it will be as much as 100 mph. faster than its predecessors — the six-jet Martin XB-48, and the four-jet Convair XB-46 and North American XB-45.

In addition to being the first swept-back wing design to be completed for the Air Force, the Stratojet introduces revolutionary features particularly in the matter of engine grouping and nacelle mounting. Four of the six GE turbojets used to power the XB-47 are mounted in two double nacelles suspended from the wing on a strut at either side of the fuselage about one third of the distance out to the tip. The other two turbines are located in individual nacelles out near the wing tips. It will have a 3-man crew.

Like the Martin XB-48, the Boeing uses tandem landing gear with two sets of dual main wheels retracting into the fuselage and small outrigger wheels retracting into the inboard nacelles. The XB-47 has a wing span of 116 ft. and an overall length of 108 ft. It approaches the B-29's size and probably can carry an atomic bomb. Flight tests are expected to start sometime next month.

Another addition to the new jet air force is the Curtiss XP-87, a heavy, four-jet fighter with a wingspan of 60 ft. and a length of 65 ft. Powered by four Westinghouse jet engines, the XP-87 is designed for all-weather operation and will include the latest developments in anti-icing equipment. Ground and taxi tests now are being conducted at Columbus, Ohio, and upon their completion the airplane will be sent to Muroc, Calif., for flight testing.

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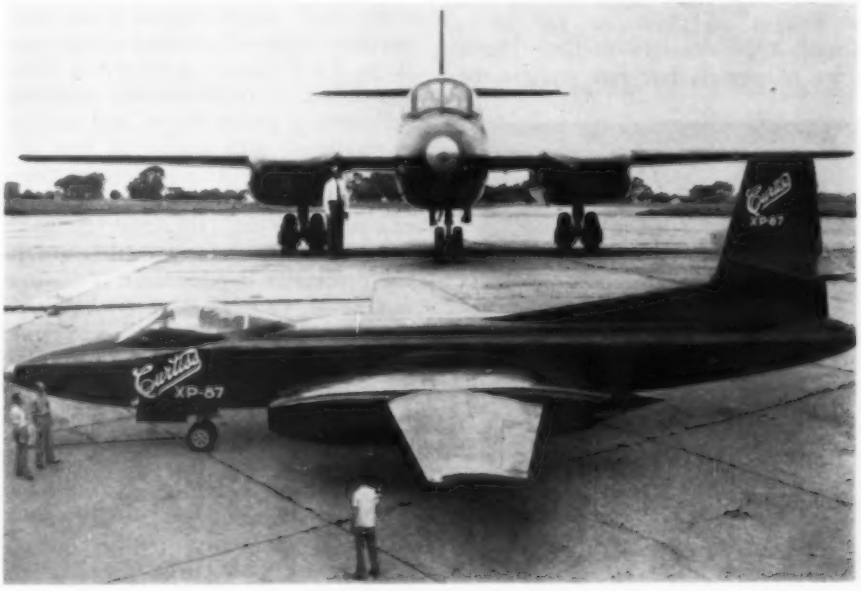

Largest Air Force fighter is this four-jet Curtiss XP-87 for long range, all-weather operations. Nosewheel appears to be off-center.
—(Curtiss Photo.)

Photos above show VHF tuning table at top of cabin, complete ARC Type 17 VHF set on display and rod antenna on Cessna 120. Demonstration installation in Cessna (right) shows (1) VHF receiver, with VHF transmitter at right, (2) low frequency range receiver, (3) long-wire antenna connection, (4) base of VHF antenna mast. —(SAC Photos by Tom W. Collins.)

Complete VHF for Lightplanes

By AL HARTING

FOR once, the little guy in private flying is getting the breaks in the field of VHF aircraft radio.

So says Carl Fox, superintendent of the Southwest Airmotive radio shop at Dallas, who has been making highly successful VHF installations in lightplanes, as well as in larger executive jobs. He is careful to point out, however, that the time of a mandatory, all-VHF setup is still perhaps five years in the future. Currently, a majority of CAA towers and range stations are equipped for VHF operation, but standard low frequency gear will be retained for a number of years hence. VHF, in the fall of 1947, offers sizeable refinements for those who desire them.

As manufactured by the Aircraft Radio Corporation, currently turning out both transmitters and tunable receivers, complete VHF equipment weighs about 14 pounds. Adding a range receiver of 8.8 pounds, for low frequency navigation, the lightplane owner has increased his ship's overall weight by approximately 23 pounds. Thusly, for the first time, he can whip that venerable bugaboo—too much poundage for his horsepower. In addition, he can work a radius of 100 miles, free of atmospheric static troubles.

What does this cost him? The ARC Type 17 transmitter and receiver, which Fox recommends, will run about $900, including the installation. The low frequency range receiver can be bought and installed for $400. Total: Approximately $1,300. That's a lot of money, but Fox stresses the fact that the equipment is of particularly fine workmanship. They're being purchased by numerous small plane owners.

Without VHF, the pilot who competes with local traffic adds about 12 pounds more weight and gets less operational efficiency from a 25-watt, low-frequency transmitter working on 3,105 kc. and 6,210 kc. He also listens on 278 kc., plus the regular range frequencies and, even then, in bad weather he can't hear the tower until he is over the field—and sometimes not then. To get any range, he uses a trailing antenna, which constitutes both a hazard and a nuisance, or a V-type aerial. The new VHF rod is but 23 inches of sheer simplicity.

In lauding VHF's static-free quality, Fox says that the only exception to this rule has been an occasional case of noise resulting from a loose ignition harness, which serves as a warning to re-locate the antenna.

New Aids to VHF Users

Other aspects of the VHF program with which pilots should be acquainted includes the CAA "visual-aural" ranges which operate a needle on the panel to indicate whether the plane is left or right of the leg and aurally signal whether the craft is East or West of the station. Although new, there are many such ranges in the country today and others are upcoming in the near future.

Also important are the "omni-directional" range stations which may be considered still in the experimental stage. They feature a revolving radio signal, with a synchronizing pulsation each time it passes North, and provide navigational data similar to that offered by ADF. At the present time, this equipment is too heavy and too expensive for the lightplanes, although lighter and less costly models are in the process of development. The same is true of visual-aural gear. Fox says that lack of competition among manufacturers has been partly responsible for a relatively slow realization of low prices and late improvements.

As for VHF receivers and transmitters, Aircraft Radio Corporation has a decided jump on the industry. There are several other brands of transmitters available but no tunable re-

(Continued on page 44)

Hitch "Air Power" to Your Business with a Beechcraft

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VOL. VIII, NO. 2 OCTOBER, 1947

Modern AIRPORTS

This Month's MODERN AIRPORT

Formerly used by the airlines, New Orleans Municipal Airport is now limited to private fliers, with airlines centered at Moisant International Airport where private flying is discouraged. Photos show New Orleans Municipal jutting into Lake Pontchartrain (upper) and its famous administration building. Full details on page 22.

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THIS CAN HAPPEN TO YOU

DID you ever fire away at sitting ducks in a shooting gallery?

If so you'll understand why so many small airports are being closed up all over the country. In fact, it looks as if they are being run out of business faster than the national airport program and private enterprise can build them. The sad part of the situation is that little airports are sitting ducks. One sniping, irate property owner living near a landing field has the terrific legal power to break it, force it out of business, force the airport owners to pay him easement money or purchase his property at a high nuisance rate.

Court rulings favor irate neighbors in the anti-airport epidemic, with little recourse left to operators. Protection is urgently needed.

By GEORGE E. HADDAWAY

Past issues of this publication have consistently warned airport owners and operators of their extreme vulnerability and have reported on the many unfavorable court decisions, including the famous Causby case, which went to the Supreme Court last year and ended in favor of the landowner. Equitable or not, right or wrong, the Causby case set off a chain reaction of airport closing which has now reached epidemic proportions.

Threat of Jail

A typical situation is one that happened in our own backyard last month. Like so many other small airport owners and operators, Freddie Nagle and Charlie Orr of Dallas, Texas, didn't think it could happen to them. But happen it did, and today they are sweating under a $2,000 fine together with a warning from the judge that if they are haled into court again, he'll throw the book at them! Incidentally, Freddie and Charlie don't like the prospects of serving 245 days in the local bastille. The details might be different from a lot of the cases all over the nation but the principles involved are the same. Here's what happened to the Dallas operators:

In 1944 Nagle and Orr were test pilots at North American Aviation, Inc. They teamed up and decided to go into the small airport business when their wartime jobs ran out. So late in 1944 they picked a site about three miles from downtown Dallas—Skyline Airport as it is known today. Just outside the city limits, their tract of land bordered on a string of houses located within the city limits. Weren't airplane owners raising cain about airports being too far out in the country? There would be no one-hour taxi rides to downtown Dallas from Skyline airport. The three miles can be negotiated in the matter of a few minutes—like Kansas City Municipal.

In 1945, a Mr. Houston purchased one of the houses bordering the field. Soon after his occupancy he began complaining that airplanes operating on Skyline were flying too close to his roof and, while warming up near the North-South runway, were blowing dust into his house. In 1946 he and a woman neighbor erected two high flagpoles on their properties at the end of the principal runway.

The flagpole hazard was so dangerous, there was nothing to do but to go to court and attempt to get the poles removed. So Nagle and Orr proceeded to take legal action. They managed to get the flagpoles removed and they purchased the woman's property but here's the catch: They agreed that no airplane would fly within 100 feet of Mr. Houston's house, or warm up engines within 50 feet of his property.

Principals in the Dallas flagpole case are, left to right, Neighbors Leonard Houston and Mrs. W. V. King, and Skyline Airport Operators F. C. Nagle and Charlie Orr. Court action began with effort to have flagpoles removed from airport approach as flight hazards, ended with operators fined $2,000 for contempt on Neighbor Houston's charges. Judge's remarks indicated jail terms for Nagle and Orr if they are charged anew.
—(SOUTHERN FLIGHT Photos by Squire Haskins.)

Aerial photo shows 60-odd acre airport, only 3 miles from courthouse and busiest Dallas private field, operated by Nagle and Orr. Complaining neighbors' property adjoins field at bottom of photo. New traffic pattern is indicated by arrow, with triangular addition at far end now graded and being used. Airport is outside city limits. —(SOUTHERN FLIGHT Photo by Squire Haskins.)

Last month Mr. Houston brought them into court—not for damages, but in contempt proceedings — and cited 87 counts where Skyline aircraft had flown under 100 feet from his rooftop and had continued to blow dust into his windows. The operators denied the charges but were held in contempt on 10 counts. The Skyline corporation was fined $1,000 and each operator $500 apiece, the fines to be held in abeyance until they are called back into court and Mr. Houston proves they have flown near his rooftop or blown dust into his house. That might be tomorow, although the operators are doing everything in their power to avoid the inevitable. They are building a high board fence 250 feet long, some 170 feet from Houston's property, so no particle of dust can get by. They have acquired more land and changed their principal runway approach, now far removed from Mr. Houston. But if Joe Blow from Oshkosh comes flying in over Mr. Houston's house, completely unaware of the local situation, Nagle and Orr are responsible and the fine sticks. "Throwing the book" at them strongly smells of additional fines. A healthy jail sentence for contempt of court is certainly a good possibility. Meanwhile, the boys engaged a real estate agent to find out what Mr. Houston wants for his house. The price is $12,500. In 1945, Mr. Houston paid $3,200 for the property.

Little Hope Seen

Did Orr and Nagle make a mistake when they bought out the lady who also erected a flag pole last year? Was it a bad precedent, encouraging other land owners to force them into buying other property? Should they have purchased easements from the nearby home owners before buying the airport site? If so, where would easement purchases end—a mile away from the field? Two miles? Every road they go down is a blind alley. It looks mighty hopeless for them and for three other operators on their airport who have a total of something like $200,000 invested at Skyline.

The point is that practically every airport owner in the country is as vulnerable as Nagle and Orr. It CAN happen to you. Court after court is protecting the landowner versus the airport.

How can the epidemic be checked? How can millions of dollars of aviation investments be protected? What can be done to preserve some measure of utility in personal airplanes as afforded by close-in airports? There is no more serious problem facing aviation today. Not even the large metropolitan airports, primarily used for airline operations, are immune from the disease. One by one the courts are picking off the sitting duck airports while no concerted industry or civic action is being taken to check the epidemic.

The principal tragedy aside from the demise of so many airports and landing fields lies in the fact that there isn't much being done even in long-range efforts or planning to correct the situation. How about some effort to educate the public on the public utility value of airports, and how airports bring business to a com-

(Continued on page 33)

New Orleans Municipal Airport, gateway to the French Quarter and many other famous attractions, has one of America's finest administration buildings, now devoted entirely to private flying. Its many features include hotel accommodations and a swank supper club.

Private Fliers' Center

Ideally located near downtown activities, New Orleans Municipal leads the nation in providing facilities for private fliers

By MIRIAM MARSTON

THE writers call it fabulous New Orleans. This month's modern airport is one of the show places that make the Crescent City deserve that title. Located six miles northeast of New Orleans, surrounded by landscaped parkways extending to Lake Pontchartrain's seawall, New Orleans Airport is the realization of the private pilot's dream.

As you enter the traffic pattern after clearance from the tower, the airport resembles a huge triangle with its apex projecting into the lake. Its area is 360 acres, with the longest of four hard-surface runways measuring 4,000 feet. Lightplanes may also land on the turf next to the runways.

In your final approach, you will notice that all airport buildings, including hangars, conform to the same Spanish architectural style. The ramp service jeep will signal you to a spot in front of the administration building.

If you want to rush for that famous French Quarter, buses and taxis are available, but don't worry. Take a look at one of the most complete airports for private flying in the United States.

Step through those glass doors into the administration building, and inspect the large compass mosaic in the center of the marble floor, showing distances to all principal cities in the world. In the lobby are booths occupied by a charter service and several of the fixed-base operators, and in the right far corner is the airport coffee shop. Also on the first floor are offices of an aerial photography and advertising service, and the Walnut Room, now used for private parties but soon to open as a swank supper club.

Take the self-service elevator to the second floor, where you can see more closely the balcony wall murals on aviation painted by Xavier Gonzales. Down the left hall are six modern hotel rooms with baths. On this floor you will also find the office of the airport manager, former AAF Colonel Herbert F. deBuys; the CAA inspector's office, and Air Traffic Control and Overseas Communications Station. On the third floor is a CAA approved instrument shop.

Exit via the front doors of the building, where you will see a patterned vista of flowering shrubs and palm trees, maintained by a staff of gardeners. Walk down the circular drive to the right, and take a look at the fountain with its statues, in which many a pilot has taken an unexpected "dunk" after his first solo.

Straight ahead down the road, on the west edge of the airport, you can see the $1,500,000 former Army facilities, obtained by the airport on August 1, including a hangar 200 feet by 160 feet, a repair shop, warehouse, and several frame buildings.

Moffett Hangar is on your right, one of three which house eight fixed-base operators with complete maintenance, parts, and repair facilities, in addition to flight schools and private plane agencies. These modern hangars are steam heated and fireproof, with sprinkler systems.

By this time you probably have noticed that nowhere have you seen advertising signs to disfigure the exceptional beauty of the airport's buildings and grounds.

No French Quarter yet for you.

There's more to be seen here. Walk down the front drive again to the other side of the airport. You will find tennis courts, and an inviting swimming pool. To your left are Harry P. Williams and Mitchell Hangars, the ones we told you about. That other hangar and those five buildings belong to the Louisiana Air National Guard, who have a ramp of their own, utilized also by frequent Army transient ships.

At the end of the road ahead of you is the seaplane ramp, where dolly service is available.

When you go back to the administration building and meet Airport Manager deBuys, he'll tell you that the State of Louisiana spent $6,000,000 in 1934 in construction of this aviation country club, dedicated as Shushan Airport. In 1940, under Governor Sam Jones' administration, it was rechristened New Orleans Airport and placed under control of the Orleans Airport Commission. All but two members of this commission are private fliers themselves. Manager deBuys will also tell you about the 23,000 landings and take-offs per month at the field.

Then he'll switch to airport plans, present and future. The airport's night lighting system is soon to be improved by addition of new runway markers. A 7,000-foot runway is contemplated. Cargo ships will operate in the former Army area, where freight handling equipment is available. Southern Railway has sidings on the field.

The ex-GI hangar has an ideal set up for a major overhaul shop, and the airport commission is looking for an applicant. Also planned for this hangar is a complete airplane accessories shop. The frame buildings built by the Army will be headquarters for a parachute, fabric, and upholstery shop, the Louisiana Wing of the Civil Air Patrol, and two squadrons of the 307th Bomb Wing, AAF Reserve.

Well past the talking stage is a breakwater to be built at the west side of the airport by sinking war surplus concrete ships. This new harbor will be used by the Army Transportation Corps as an amphibious training school, besides functioning as a seaplane base.

With these improvements, New Orleans Airport will more than ever be a paradise for the private flier. But it'll do right now as one of America's most complete modern airports, goal of thousands of private fliers going cross-country and aerial gateway to the Crescent City's famous French Quarter. ★ ★ ★

A swimming pool (top) is operated on the airport, even though Lake Pontchartrain almost surrounds the field. Widely known is the ad building's beautiful lobby (center), decorated with famous aviation murals. A corner of one of the numerous fixed-base operations is at right, showing part of the hangar occupied by J. D. Reed, leading U. S. Beechcraft distributor.

Rescue Requirements

Equipment and procedure for safety action in airport emergencies will require more study and application to meet new standards.

By JOHN H. FREDERICK

EVERYONE will be giving more attention to airport rescue facilities as time goes on. Already the suggestion has been made that the CAB prohibit the use of any airport by scheduled air carriers unless adequate fire-fighting equipment is available. Of course, airport managers have always been aware of their responsibilities in connection with accidents taking place on or near their airports, but the time is here when they will have to do more about it than many of them have done in the past.

The emergencies which occur at airports have been classified as follows:

(1) Those which occur unexpectedly or with little warning on or near the landing area, such as undershooting or overshooting the runway, collapse of landing gear on landing or take-off, serious ground looping, collision, fire, explosion and other conditions resulting in accidents and crashes. No one can do much preparation in advance for accidents of this type but since they are usually observed at once by the control tower, prompt action of an emergency nature may be taken.

(2) Those which also occur unexpectedly but unobserved by the control tower. Reports of such accidents on or near the airport have to be relayed to the control tower and include collisions, ground looping, structural failures on ramps, taxi-ways, operating areas, within hangars and other points out of sight of the tower. Emergency procedures for these situations follow the same general pattern as for the first group, except that when information is received in the tower by telephone or other means, the informant must furnish a description of the nature and location of the emergency, and must state whether or not local or outside alarms have already been sounded.

(3) Those for which advance precautions may be taken. These accidents usually involve information received in the control tower from aircraft pilots and other reliable sources regarding air-borne aircraft in distress due to various causes indicating the probability of accident, fire, or other emergency condition upon landing. Under these circumstances the nature of the emergency may be anticipated and personnel and apparatus made ready. Typical of this type are aircraft reporting possible collapse of landing gear; no brakes, flaps or nose wheel control; flat tire; no air speed indicator; and any other conditions jeopardizing a normal safe landing.

In his testimony before the House Committee on Interstate and Foreign Commerce investigating safety in air transportation, Jerome Lederer, chief engineer of Aero Underwriters, pointed out that an average of one out of fifty air transports can be expected to overshoot and crash off the end of runways each year. This, in itself, should bring home the importance of rescue facilities both to airport managers and to air carriers.

At most airports the main deterrent to the establishment of adequate rescue organizations is the cost in terms of manpower and equipment. To be effective the rescue organization must be ready to go into action at any moment, night or day, if schedules run around the clock. Equipment must be capable of providing protection for the occupants of the largest type aircraft that regularly uses an airport and must be able to travel over soft ground rapidly as well as over runways, since many accidents take place just outside the airport. If the airport borders a body of water, crash boats must be available and these must also be manned for the full time the airport is likely to be used.

The type of equipment required varies with each airport, depending on size, amount of traffic, surface, climate, surrounding terrain, nearness of city fire departments, highways, availability of water and size of aircraft normally using the field. It has been estimated that equipment for a busy airport, used by airlines, will require an investment of between $75,000 and $100,000, manned by at least twelve men per shift, or, considering vacations and holidays, a mimimum of 50 men. At only $2,000 per year per man, this would be about $100,000 per year for wages, or about $300 per day (this estimate does not include the crash boat, should one be needed). To do a real job similar to what the Army and Navy did, there should be 30 men per shift or a total of over 100 in all. Very few if any civil airports will be able to afford to duplicate the Army or Navy personnel, but they may find themselves having to come quite near to it.

To reduce expenses, some airport managers use airline personnel trained in rescue and fire fighting, who leave whatever job they are on to form rescue teams when an emergency occurs. Hervey F. Law described what he had done along this line at Washington National Airport, of which he was then manager, at the last meeting of the American Association of Airport Executives. This is an economical way of handling the matter but it has certain obvious defects such as continuous transfer of airline personnel, illness, vacations, changes of jobs, and, since on a busy airport there are a great many alerts, the interruption in the work of team members which, in itself, might lead to other accidents.

Billings Wilson of the New York Port Authority, also at the last A.A. of A.E. meeting, described another method which consisted of using personnel employed by the airport on stationary equipment such as in the shops and boiler rooms. It was held that these people are in a better position to help, especially since they are employed by the person responsible for rescue operation — the airport manager. In fact, Wilson suggests that airports be designed so that boiler rooms, machine shops and the like are located close to the fire station so that maintenance personnel can be in position to respond to alarms without any delay. At one airport, averaging five alerts a week, the rescue crew is composed of non-supervisory personnel stationed in the vicinity of the fire house in the normal course of their work. They get to the trucks 12 seconds after an alarm is sounded. The number of alerts at La Guardia Field, the world's busiest airport, has averaged 15 per month though they have had as many as five in a day. In six years there were 24 cases of actual rescue operations at La Guardia, of which four were serious. On the basis of the use of the airport personnel, therefore, it appears that the work will not be too severe a strain on airport maintenance if this method is followed.

The time factor is, of course, all important in determining the type of personnel as well as the equipment used. There is usually only a very short time available to reach a crash and save the occupants. A standard system must be devised at each airport, based on past experience, to set this time interval. For example, if most crashes do not catch fire for three minutes, then the time should be set at possibly one minute to reach the crash if it is on the airport. C. L. Griffin, of Walter Kidde & Co. says, "Navy tests have shown that it is reasonably safe to fight gasoline for about 4 minutes. After that period

(Continued on page 33)

IMPORTANT NEWS FOR BEECHCRAFT OWNERS AND FRIENDS IN *North Texas*

J. D. REED RETURNS TO DALLAS TO HANDLE BEECH SALES AND SERVICE

The "South's Finest Aircraft Service" Will Be Available to Plane Owners . . .

J. D. REED

The J. D. Reed Company, Inc., the South's largest aircraft distributor and service corporation, has been made distributor in the North Texas area for Beech Aircraft Corporation of Wichita, Kansas. Headquarters for the area have been established in association with Southwest Airmotive Equipment Company at Love field, Dallas.

The J. D. Reed Company has served as Beech distributor since 1945 in the area comprising practically all of the Gulf Coast of Texas, Louisiana and Mississippi with offices and facilities at Houston and New Orleans. During this time the company has established a record in the sales of the popular all-metal, twin-engine Beechcraft Executive Model 18 and the revolutionary new Beechcraft Model 35 Bonanza and has become the largest distributor of these outstanding planes.

In addition to Beechcraft sales and service, the J. D. Reed Company operates a complete and modern aircraft service including a Super Aircraft Repair Station, parts, gasoline, and storage, radio sales and service, charter service, ambulance service and an instrument school equipped with Link Trainer.

J. D. Reed, President and owner of the company says that these services now will be available to North Texas flyers with the expansion of his organization into that territory. Mr. Reed is well known in aviation throughout the southwest and will be remembered in the North Texas area as co-organizer and partner of Air Activities which served as distributor for Fairchild, Howard and Taylorcraft planes for several years in Oklahoma, Texas and Louisiana and operated one of the first successful charter services in the country.

An aviation enthusiast, Mr. Reed has been associated with the progress and development of the aircraft industry in the southwest since he learned to fly in 1927. He has been prominently identified with air racing having two entries in the recent National Air Races at Cleveland where one of his ships won second place in the Sohio Trophy race. Previously, his plane placed second in the Miami races earlier in the year.

As a veteran flyer himself, Mr. Reed knows the type of service required to meet the exacting demands of modern flying for business and pleasure and his trained organization and facilities are designed to provide such a service.

The South's Finest Aircraft Service

- Beechcraft Sales and Service.....
- Super Aircraft Repair Station.....
- Aircraft Parts.....
- Gasoline and Storage.....
- Aircraft Radio Distributors and Service.....
- Charter Service.....
- Air Ambulance Service.....
- Instrument School — Link Trainer...

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AND NOW *Dallas* FOR NORTH TEXAS

The States at Work

Recent accomplishments by NASAO promise renewed action by state officials at their forthcoming convention in Fort Worth.

By WILLIAM C. LAZARUS,
Aviation Supervisor,
Florida State Improvement Commission

WHEN NASAO's President L. L. Schroeder raps the gavel to open the annual convention of the National Association of State Aviation Officials at Fort Worth, Texas, on October 26, the forty-two member officials can look back on a year of real accomplishment. Organizations such as NASAO are spawning grounds of the aviation trends, needs and progress in the United States. Each year, NASAO in a three-day dawn-to-dusk convention conceives the aviation problems of our nation and reduces its thoughts upon these subjects to a carefully worded group of resolutions. Accomplishments can therefore be measured by the number of resolutions upon which favorable action has been taken.

A review of the thirteen resolutions adopted by NASAO in the 1946 Annual Convention held at Butte, Montana, reveals how the organization channeled its efforts for aviation progress during the past year:

Surplus Airport Disposal

State officials last year were thoroughly displeased with the disposal procedures being used by the War Assets Administration and the Civil Aeronautics Administration and said so in a tersely worded resolution.

They appealed to President Truman and to members of Congress from the "inefficient, delay-ridden, dictatorial manner in which municipal, county and state owned airports were being returned to the original lawful owners." **Action:** Passage of the Baldwind-McMahon Surplus Airports Act. NASAO put considerable pressure behind the passage of this legislation. The new law still leaves considerable to be desired by the state officials because of certain last-minute changes. Also, many state officials feel that WAA and CAA have not done well in administering the disposal of surplus airports and at Fort Worth may again resolve on this subject.

Separate Air Force

For the third consecutive year, NASAO resolved in the 1946 convention in favor of "unification" of the armed forces. With over 75 per cent of state aviation officials having served in the Army or Navy Air Forces, the resolution was backed strongly by many state officials in individual appeals to their senators and congressmen. Unification was recently completed by President Truman when a separate Air Force came into being. Not alone in the fight, NASAO can only join with many other groups in credit for this forward step in American Aviation history.

NASAO urged the State Department to commence negotiations "with our neighboring countries on the subject of facilitation of border crossings by private fliers for pleasure."

Border Crossing Facilities

Michigan, Florida and Texas had long been hearing complaints from private pilots trying to cross international boundaries from their respective states. The resolution was backed up by the NASAO International Committee, and was brought forcefully to the attention of the ACC Subcommittee on Facilitiation of International Civil Aviation (an ICAO subcommittee). **Action:** After an extensive survey trip by the ACC subcommittee on July 27, 1947, a new service was created particularly for the international air tourist at the Rio Grande Valley Airport at Brownsville, Texas. U.S. citizens can now obtain Mexican clearances on the U.S side of the border. Formerly they had to enter the foreign country and were never sure they could be cleared on arrival. If this idea is successful it will be tried at other U.S. airports of entry. Officials of the border states, through NASAO, have worked successfully to better conditions in this regard for private pilots, but the situation is still far from satisfactory in all respects. Air carriers are having a particularly rough time at international boundaries as a result of obsolete federal legislation geared to the "steamship era" of world travel. Fines and cost of housing foreign nationals whose clearance papers are not in order cost some airlines as much as $1,000 per month. It is probable NASAO will take further action in this matter at Fort Worth on behalf of both private pilots and the airlines.

Personal Aircraft Development

A 1946 resolution urged CAA and NACA "to expand and accelerate a research program which will result in improved performance, safety, and utility of personal aircraft." Knowing of the many aircraft research facilities developed and available at the end of World War II, NASAO wanted these used to give the public better aircraft. **Action:** Experiments with the swivel landing gear for personal planes and the "noiseless propeller." Although NASAO as an organization and its individual members can do little other than encourage such development work, NASAO was among the first to voice encouragement to CAA and NACA on these projects. **Prediction:** NASAO will again press for better personal airplanes—possibly addressing the manufacturers as well as NACA and CAA.

Gliding and Soaring

The Veterans Administration was urged by resolution to "accept glider pilot training under the GI Bill of Rights Flight Training Program." The VA at Washington responded to this proposal and there are now at least three such glider flight training schools (Florida and Ohio).

The second part of this resolution urged the CAA "to create within its personal flying development program an organization which will properly encourage the development of gliding and soaring." NASAO has not been advised of any favorable action on this score to date. It apparently fell on deaf ears as the CAA has done little to help glider development in the past year. CAA inspectors still give flight tests on gliders with both feet squarely on the ground, not being required to ride even though the glider has an NC airworthiness certificate. The recent national soaring contest at Wichita Falls where over 40,000 miles of cross country glider flying was accomplished in 12 flying days may spur the NASAO to again befriend the glider industry.

Weather on Commercial Radio

A resolution adopted in Butte in 1946 asked the U.S. Weather Bureau to originate aeronautical weather broadcasts over commercial radio stations. This was done so that flying farmers and others could get accurate weather data on their home radios and enable them to do proper flight planning before take-off. **Action:** The Weather Bureau published a list showing that this type program is now being broadcast in 38 states through a total of 99 commercial radio stations. **Prediction:** NASAO will turn its attention to relocating weather collection stations to give more accurate information to private pilots on "off-airway" flights.

Airmarking

By a tie vote in the closing hours of the 1946 NASAO convention the

(Continued on page 30)

LUSCOMBE *Engineered* FOR UTILITY

The REVOLUTIONARY *Silvaire Sedan*

a NEW FOUR-PLACE ALL METAL PLANE

Here's the plane designed *by* farmers *for* farmers. A revolutionary plane with *all* the features *you* asked for! Not until you sit in the new four-place Silvaire Sedan will you know how roomy and comfortable a personal plane can be. And not until you have flown the Silvaire Sedan will you appreciate the easy handling, maneuverability and maximum visibility found only in this most modern all-metal plane.

The Silvaire Sedan is not an adaptation of a war-born airplane. It is designed from "scratch" to meet the engineering requirements of a truly new four-place personal plane.

Here are but a few of the salient features a Silvaire Sedan offers . . . details never before found in one plane . . . *Utility* . . . carries four passengers and 100 lbs. of baggage in roomy comfort, or, more than 600 lbs. of cargo in more than 55 cubic feet of cargo space . . . *Small Field Adaptability* . . . 165-horsepower engine, almost any field or pasture a landing strip . . . cruising range of more than 500 miles at approximately 130 miles per hour cruising speed . . . *High Wing Visibility* . . . plus 3,716 square inches of window area . . . *and* durable, all-metal construction throughout.

Plenty of roomy comfort for the family in the unusually wide seats, and lots of head and leg room. And, there's "hilltop" visibility with overhead and rear windows and *more window area than the average low-priced car.*

For maximum utility seats may be removed for easy access to load more than 600 lbs. of cargo in the 55 cubic feet of cargo space. Fully loaded, the gas and oil operating costs are estimated at less than two cents per mile!

COMPANION TO THE LINE OF FOUR FAMOUS 2-PLACE SILVAIRES

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Be one of the first to enjoy the true utility of a new *Silvaire Sedan*. You can get priority on delivery by making a token deposit now with your authorized Luscombe Dealer. Deposit on priority certificate will be refunded at any time upon request. Write Department 21 for details.

LUSCOMBE AIRPLANE CORPORATION

DALLAS, TEXAS

FIRST IN *All-Metal* PERSONAL PLANES

SEEN AT UNIVERSITY OF SOUTHERN CALIFORNIA AIRPORT MANAGERS CONFERENCE last month at Hancock Field were (left to right) Ray I. Hess, Chico, Calif., Municipal Airport manager; Hank Livermore, El Monte, Calif., airport owner; Walter Fulkerson, Phoenix, Arizona, Sky Harbor manager; B. M. (Mike) Doolin, San Francisco Airport manager; A. E. (Art) Thomas, Des Moines Municipal manager, and William Gibbs, Gibbs Airport, San Diego, owner. —(6th Region CAA Photos.)

STATES AT WORK

(Continued from page 28)

organization failed to adopt a resolution which would have eliminated latitude and longitude requirements from the CAA standard airmarker. Those favoring elimination argued that there were too few airmarkers to waste time, materials and money adding eight numerals which few pilots recognized. **Action:** Many of the individual states last year dropped the latitude and longitude requirement. States are the biggest creators of airmarkers. CAA paints very few with federal funds. **Prediction:** The latitude - longitude question will get a full airing at Fort Worth and NASAO will resolve to eliminate the requirement.

Extension of Air Transport

NASAO asked the Civil Aeronautics Board to expedite the "feeder airline" applications which were then before it. In the year, seven of these feeder line applications have been certificated but many NASAO officials are not pleased with the pattern of service being offered. It is probable that considerable time at the 1947 convention will be devoted to the role the states should play in the regulation of air transportation on intrastate routes and intrastate segments of interstate flights.

Federal Airport Act

There were two resolutions dealing with this Act at the 1946 convention. One called upon Congress to amend the Act so as to give sponsors credit for work done after the date of the act but before a firm grant agreement was entered into with CAA, provided it met master plan specifications. Congress took no action to amend the Federal Airport Act.

The second resolution dealt with the channeling of Federal Airport Aid Funds through state aeronautics commissions, urging the 44 state legislatures which met in 1947 to adopt channeling. At last count approximately 20 of the 44 had adopted channeling. A few legislatures are still in session so that the final count can not yet be made. Most "channeling" states are adding funds to match federal money in this program. The average state share is about 25 per cent of the project cost.

Accident Prevention

NASAO strongly urged a national aviation accident prevention program to be initiated by the National Safety Council "at an early date." State officials, realizing the unsettled nature of personal flying as well as air carrier operations, felt something should have been done last fall in the field of accident prevention. This resolution might be considered prophetic by some.

Other resolutions adopted by NASAO in 1946 were expressions of appreciation for assistance rendered that organization and similar matters. It therefore appears that 1946-47 will prove a banner year of accomplishment.

Just what potent resolutions will evolve at Fort Worth remain to be seen. It is known NASAO is not pleased with the progress to date under the Federal Airport Act. CAA will have an opportunity to explain but chances are NASAO will resolve to ask Congress for some changes in the law so that more airports can be built and the legal and technical complications holding back the construction can be eliminated. ★ ★ ★

Better Weather Reporting, Revised Airport Aid Plan Asked in 2nd Region Conference Resolutions

A resolution asking the Weather Bureau to redistribute weather stations so as to eliminate overlap in facilities at certain points and provide weather at points not now reporting featured the Second Annual Regional Conference of CAA Region Two in Atlanta last month. The delegates pointed out that in Florida some stations are only 14-15 miles apart while others are as far as 95 miles apart, and that conditions are even worse in Mississippi. They stated further that weather accidents are up to 6 per cent from 3.9 per cent of all non-scheduled accidents. Many of the gaps have been caused by the closing of army bases which supplied reports during the war.

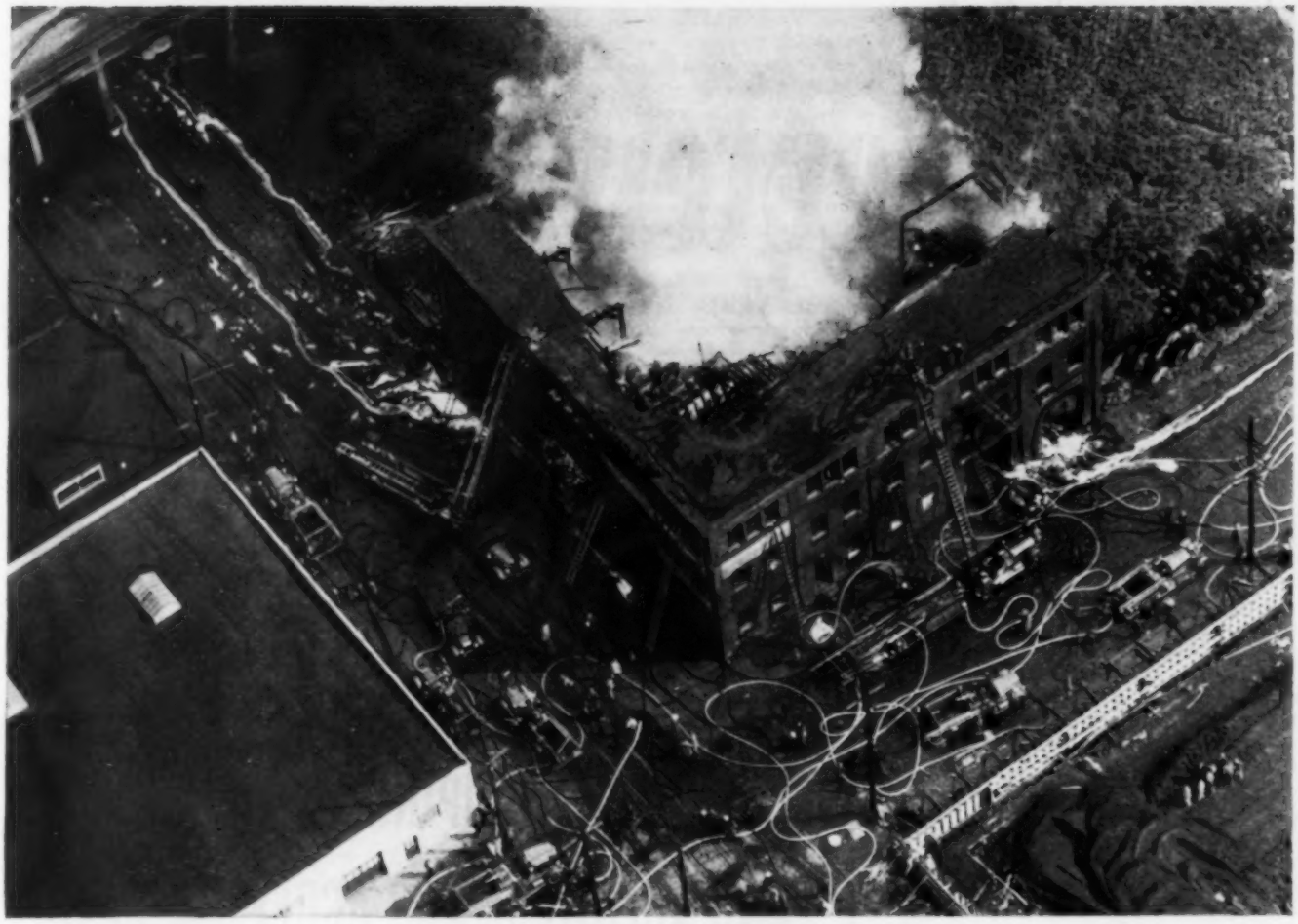
A second resolution requested the CAA and Congress to revise the Federal Airport Act to make it as near as possible like the Federal Highway Aid Act. This would require the creation of suitable well organized State Aviation Agencies similar to state highway agencies in each state to carry it out.

By a unanimous vote, delegates and committeemen voted to eliminate the requirement that standard airmarkers must have latitude and longitude on them. The standard was set by CAA airmarking specialists during the war and upon CAA sponsorship was adopted as an International Standard by ICAO. The Atlanta action shows that non-scheduled aviation in the Southeast wants airmarking simplified.

Other resolutions adopted included an urgent plea for a U.S. Air Force "in being" plus a military and civilian air research program which would keep this country ahead in technical developments.

A total of 40 resolutions were adopted while six were defeated. Noteworthy among those defeated was one introduced by fixed base flight operators participating in the Veterans Flight Training Program. They wanted CAA to reinstate the Limited Commercial pilot certificate so they could offer courses for veterans between private pilot and commercial. It was defeated by a narrow margin on a second ballot.

Principal speaker at the banquet which concluded the three day meeting was Assistant Secretary of Commerce for Air John R. Allison who emphasized the need for a strong civil aviation industry in peacetime. He indicated that subsidized flight training and manufacturing might be necessary to sustain this. However, he urged private interests to proceed and not wait for government aid on all types of aeronautical ventures including airports.



'copter photo of warehouse fire, Portland, April 9, 1947. Courtesy *Oregon Journal*

This press car gets there first

To the helicopter fire lines are no problem, nor crowds, nor tough terrain. The reporter gets the news faster. The photographer shoots a pictorial record that's at home on the front page.

Portland's wide-awake **Oregon Journal** has owned a Bell Helicopter since last spring—"primarily to enable the news rooms to cover the news with more speed and accuracy." For the **Gannett** papers in the East, as for the **Journal**, Bell Helicopters are handling spot news breaks.

Still other Bell Helicopters are making news for the **Los Angeles Herald and Express** and for the **New York Journal-American.** They have visited ships at sea . . . welcomed foreign dignitaries . . . followed parades . . . even delivered a beauty queen to the judges' stand. Says publisher William Randolph Hearst, Jr.: "Because of its flying technique you can't beat it on short-range news and photo jobs."

You can't beat it at other jobs, either: from coast to coast and overseas, Bell Helicopters are saving time and earning money for their owners. They're dusting crops, spraying orchards. They're speeding mail and merchandise, hunting oil, prospecting for hidden ore deposits.

The Bell Helicopter **can do** . . . at a remarkably low operational cost. For all the facts about The Modern Magic Carpet*, write Helicopter Division, Bell Aircraft Corporation, P. O. Box 1, Buffalo 5, New York.

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PRODUCT OF BELL *Aircraft* CORPORATION

PIONEERS IN JET-PROPULSION, RADIO-CONTROLLED FLIGHT AND SUPERSONIC AIRCRAFT FOR THE U. S. ARMY AND NAVY. DESIGNERS AND BUILDERS OF THE WORLD'S FIRST COMMERCIALLY LICENSED HELICOPTERS FOR LAND AND WATER.

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AIR Reviews

OCTOBER 1947

A periodic report on the activities of AIR REVIEW PUBLISHING CORPORATION, publishers of **Southern Flight** . . . **Modern Airports** . . . **Official Directories of U. S. Certificated Aircraft & Airmen** . . . **Air Market Data Service** . . . **Standard Guide to Private Planes** . . . 1901 McKinney Ave., Box 750, Dallas 1, Texas. Also Chicago, Detroit, Los Angeles, New York

AIRPORTS ARE LIKE TELEPHONES

THE MORE there are the more useful they become. Before there can be any significant increases in the numbers of persons buying and flying airplanes there must be more airports. But suddenly to mushroom thousands of new airports (one for every incorporated town is a necessity) is not enough.

The key to airport usefulness, regardless of numbers, is good management. That is why 'Southern Flight's' "magazine within a magazine," MODERN AIRPORTS, has stressed management in its editorial coverage. Management comes first, even before a new airport is constructed, whether it is a small airpark or a vast municipal undertaking.

The truth of that statement is obvious when considering the large commercial airports. The measure of editorial vision is its appraisal of such axioms in viewing the small airport, the taproot of aviation, the foundation of the industry.

'Southern Flight' channels its editorial influence to the very heart of the major problem affecting airport expansion for aviation progress — the development of efficient, practical, business like management; from the city hall (where the destinies of most airports are controlled) to the neighborhood airparks (where private enterprise has to work efficiently to survive).

Successful airport management methods all over the country have been studied by 'Southern Flight's' editors and writers in analytical articles published on a continuing schedule. We not only give deserved recognition to good management methods, but encourage airports everywhere to adapt proven principles to their own needs and to improve on them.

How to operate an airport is of more importance to aviation than how to construct one, for even the finest facility is doomed unless it is operated efficiently. Our columns place the emphasis where it belongs — with such articles as: "What Makes a Manager?," "Revenues Vs. Costs," "Marketing Aviation Fuel," "Landing Fee Standards," "City Hall Airports."

A bibliography of 'Southern Flight' articles during recent years blueprints in concise titles the very formula for modern airports now being developed in thousands of localities from coast to coast. Many of MODERN AIRPORTS' articles have been adopted in university and college curricula. They are cited repeatedly at airport conferences.

MODERN AIRPORTS, published each month in 'Southern Flight,' is pioneering important achievements in the basic requirements of progressive aviation. It is one of the many phases of a hard-working, sincere editorial service that is more influential than ever.

Pilots on Coast for SOUTHERN FLIGHT

TWO FLIERS, Ted Schell and Stan Brown, are 'Southern Flight's' new business representatives in California, having joined the organization a month ago. Office address is: 112 West 9th St., Room 1200, Los Angeles 15, California; telephone VAndike 8921.

INDEPENDENT OPINIONS OF SALES AND AGENCY HEADS AGREE ON SF'S POTENT READER LOYALTY

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ALBERT EVANS, President
ALBERT EVANS ADVERTISING, Fort Worth, Texas

THIS CAN HAPPEN TO YOU

(Continued from page 23)

munity just like the highways, railroads or dock facilities, how land values around airports have increased rather than decreased during the past decade, how aviation in cities the size of Dallas has become "big business" with millions of dollars in annual payrolls and many millions more in aviation sales? The answer is nothing.

Zoning Would Help

In the Skyline Airport case, had there been adequate zoning regulations in effect, the chances are the flag poles never would have been erected or the case snowballed into court. Since that time the state legislature has passed a bill enabling cities and counties to zone for airport protection. This came about only after years of struggling by a handful of aviation people who pushed it through without much help from aviation enterprise, including airport owners. Dallas is just now getting around to the job of preparing a zoning ordinance for proposal to the city council. But it might come too late to help Orr and Nagle—or to save from dissolution the town's nearest airfield.

A protective zoning ordinance will prohibit flag poles at the end of runways but it will not stop irate or crackpot landowners from filing damage suits. Hence adequate zoning is but one part of the problem.

The whole sorry situation is worsened by buzz pilots who actually are more crackpotty than the crackpot landholders because of the negative effect on public and court opinion. The district judge in the Skyline case stated from the bench that most people weren't airminded and didn't like airplanes, that all airports should be 'way out in the country. Many times, he remarked, airplanes flew over his own house and actually "rustled the leaves" of his trees! What the judge doesn't realize is that farmers can get as mad as city dwellers and that the Causby case, which went to the Supreme Court, was brought by a chicken farmer, who collected damages because his family was frightened and his chickens were frightened to non-production and even suicide, so that moving into the country isn't the solution.

City, state or Federally-owned airports are in a stronger position to protect themselves than privately owned airports. So we can look for the gradual decline of private fields in the wake of court decisions being handed down all over the U. S. But the managers of our municipal airports, harried by constant telephone complaints from nearby landowners, realize too that something must be done or the millions of airport dollars invested by Federal, state and municipal governments are also jeopardized. They know the public doesn't give a damn whether Pete Smith or Toonerville or Uncle Sam's army owns the field.

Meanwhile hardly a week passes that some sitting duck airport isn't the target for a sniper, who has the law on his side. Much can be done when the site is chosen for a new airport. Maybe easements over approach and take-off zones can be a solution in many instances. Zoning will have a salutary effect. But the only two roads that lead to any measure of practical solution are public education, already mentioned, and basic technical improvements in the airplane itself which will cut down the nuisance of noise. Elimination of BT's and AT's might help.

Thanks to the Civil Aeronautics Administration, something is being done on the technical side. The cross-wind landing gear is one illustration, providing as it does greater variations in approaches and take-offs, Also, CAA is pushing work in noise reduction in conjunction with the National Advisory Committee for Aeronautics. Recent experiments with an L-5 Stinson using a 190-hp. engine have demonstrated a reduction in decibel readings at a distance of 300 feet from about 90 to 65. A five-bladed propeller and a geared engine with muffler are employed. Progress, but long haul.

Industry-Wide Aid Needed

As a final commentary on the tragic wave of airport closings, a slow but steady decline in the number of aviation market places, just what is the position of the aviation industry? The principal reason why the little airports are sitting ducks is because they are fighting their own battles absolutely alone. There has been no intervention or legal participation of aviation trade organizations in any of the cases. Busy with their own individual problems, there doesn't seem to be time or inclination to centralize any common effort against a common enemy. And, as more and more small but vitally important little aviation businessmen pay fines, or are highjacked into paying nuisance values for adjoining property, or forced out of business, the very industry, which exists largely from the collective efforts and investments of these little airport businessmen, recently turned down a proposal by the CAA that personal plane manufacturers endorse a five-million-dollar government program of experimental contracts to accelerate technical improvements in personal aircraft. Some of them certainly would have been for quieter planes, which we must have if close-in airports are to remain and continue to be developed.

It doesn't make sense, you say? Of course it doesn't. But the facts are there for everyone to read and study, which is about the most important thing all of us in aviation can do, but unfortunately don't do. When we don't take time to keep up, to study and read, how in the name of Heaven can any sensible approach be made to the difficult problems facing our industry today and in the critical days ahead?

The vulnerability of little airports everywhere, which will spread to the larger terminal establishments, certainly should have top billing at the National Aviation Clinic, which convenes in Springfield, Illinois, November 19, and at the NASAO convention in Fort Worth, October 26. ★ ★ ★

RESCUE REQUIREMENTS

(Continued from page 26)

gasoline tanks may be expected to explode. The Navy set a goal of 60 seconds to effect the rescue of a pilot." Allowing 20 second for getting the men on the equipment and having it rolling, this means that at the average airport the crash trucks must travel about a half mile in 40 seconds, or at a speed of about 45 miles per hour.

At some cities there has been some controversy determining who is boss when a crash occurs. It is generally felt, however, that the airport manager should be held completely responsible for fire fighting and rescue operation at his airport; but he, of necessity, must delegate this authority to an expert and this expert or chief must have a deputy to act in his absence. When a crash takes place, the airport chief should be the absolute boss regardless of other local fire organizations that may later enter the operation (the use of additional fire fighting equipment from any nearby municipal fire station is, of course, often essential).

The inevitable conclusion regarding airport rescue requirements at this time is that, in civil aviation, the ideal organization is economically impractical since, even at the larger airports, we must content ourselves with a well-trained nucleus of full-time firemen and rescue experts, supplemented by trained airport personnel. At many smaller airports we will, unfortunately, have virtually no expert protection, at least until they are better planned from the viewpoint of rescue, and smaller airport operators are able to support the proper organizations. This means that a great responsibility rests upon plane designers and the air carriers to correct the deficiencies of ground rescue organization. This has to be done by the designers reducing the chances of injury in crashes, and from fire following crashes, by providing easier egress and access to planes. The airlines have the responsibility of seeing that there are fewer accidents to begin with, but also in providing rescue and crash training for their crews.

★ ★ ★

Air University Opens

The Air Force Air University's Air War College and Air Command and Staff School at Maxwell Field, Ala., began their second year last month with more than twice the number of students it began with a year ago. The Air University is commanded by Maj. Gen. Muir S. Fairchild.

WHAT'S WRONG

(Continued from page 16)

corner because it was too hot to fly."

I happened to know that flight director was being paid good money to build up that school. I also know that, while he was complaining about his own misfortune, other schools in the vicinity were enjoying their share of students.

No Get-Up-And-Go

Let me review other points before I sum up this whole thing to show that there is nothing wrong with aviation but *plenty* with the people in it.

Salesmen all over the country, peddling new and used aircraft, can be observed striking time and time again at the same prospects, which amounts to trying to catch fish in a barrel of dirty water. In desperation, they even try to trade a prospect out of the airplane he owns for another—and usually get stuck with a threadbare jallopy whose resale value is less than the market price.

I suggested to numerous fellows that there was lots of new business that would result in clean sales with no turn-ins, if they would only go after it. In every case, I get the same negative reaction: "How?"

Little do those salesmen realize that the real prospects are not the frequent visitor to the airport, but rather, the average business man who has the money to buy a plane with and is too busy to waste his time at airports just for curiosity or sightseeing.

Little do those same salesmen realize that every businessman with transportation problems to carry on his business is waiting for some bright lad to tell him how he can use the airplane to advantage to distribute his wares more economically, or, permit him or his sales force to cover the territory more efficiently.

Little do those same inert salesmen realize that there are neat sales tricks of warming up cold contacts by "invisible" obligations. The birthday card that insurance salesmen send out; the attractive catalogue that some organizations mail; or, the inexpensive booklet on fishing, hunting or aviation that some prospects receive put them under an invisible obligation to the sender. A safety booklet on aviation, an informal talk as guest speaker at a luncheon club at noon will pave the way for many heretofore undiscovered prospects. Yet, aviation salesmen will just repose on their fat bottoms and complain of no business.

Better Days Ahead

Getting back to people in aviation, there are too many in it now that don't believe it is here to stay and are just making the best of it while the gravy train is still in motion. Their listless, destructive endeavors will fade with the sinking sun before aviation faces a new day on the not-too-distant horizon.

Before the sun rises on that new day many of the hangers-on will have fallen by the wayside to help balance out the scales of jobs-to-men.

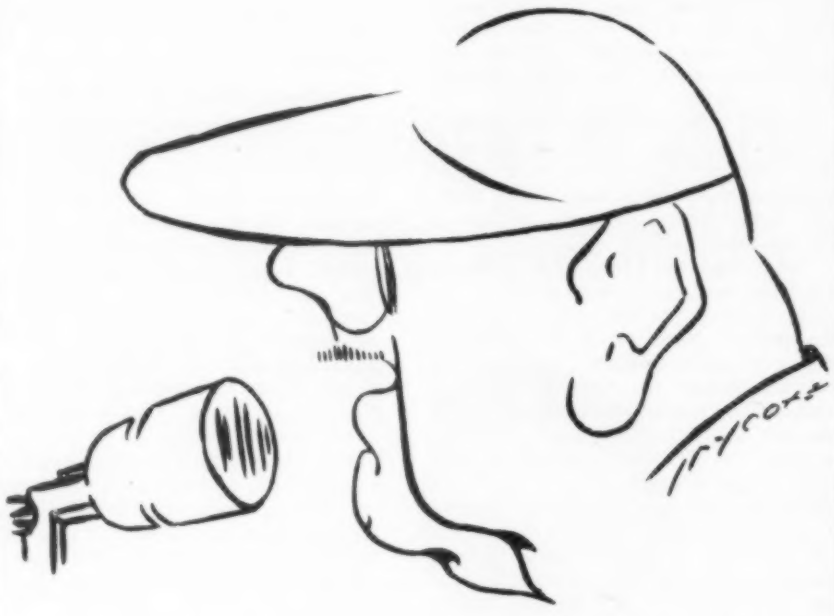
The biggest change that can be foreseen in the future for aviation is not with the industry but with people. The industry is gradually settling down to a compressed mass of normal proportions. The density of that bottoming mass is such that the industry will be supported by its weight and soon take a turn for the better.

The misinformed dreamers, opportunists, fortune hunters and unbelievers will be forced out of aviation for the better. The hardworking, industrious, honest realist who believes in its future will survive in greater numbers — and aviation will make progress. It might be slow and tedious at first, but it will be progress in the right direction and in the right proportion for a normal, steady growth. That day is near at hand for those who have vision and courage.

Aviation will change for the better. An when it does, it will be people, and not the industry, that will alter its course from a nasty, vicious circle to straightline endeavor.

★ ★ ★

PLANE PEOPLE —By Jaycox



(First in a new series.)

GENIAL Wylie (Pop) Moore, veteran airport traffic controller at Love Field, launched on an adventurous flying career as a buck private in Dallas thirty years ago.

Pop's Army debut began on the business end of a broom, but his sweeping chores were of brief duration. Discarding his broom for an old Curtiss JN4D-OX-5, he soloed in just two hours and fifty-five minutes. Recalling his initial flight, Pop admits his stentorian voice was reduced for once to a whisper as he recited the Lord's Prayer. His military rating of pilot is signed by General Billy Mitchell. He has flown with such men as Wiley Post, been pilot for Braniff Airways, and has had offers of jobs from as far away as South Africa.

After running the gauntlet of aerial adventure over a tempestuous forty-year career marked by nineteen crack-ups, Pop, losing none of his original momentum, eased his ample girth into his current position in the control tower at Love Field. Despite his harrowing experiences, Pop's enthusiasm for flying remains undiminished.

Pop's booming voice is as well known to pilots as the Dallas Radio Range and his confreres sum up his current role at the airport in one sentence: "When the weather starts socking in, old Pop is a darned good man to have around." ★ ★ ★

AIR RACES

(*Continued from page* 15)

4-pylon, 2.2145-mile course. Here are the results of the finals:

First, Steve Whittman's "Buster," Oshkosh, Wis., piloted by William Brennand; time 12:00.84; speed, 165.-857 mph. Second, Art Chester's "Swee' Pea," Los Angeles, piloted by Paul Penrose; time, 12:02.86; speed, 165.-.482 mph. Third, LeVier Associates' "Cosmic Wind," Van Nuys, Calif., piloted by Herman (Fish) Salmon; time, 12:32.88; speed 158.840 mph. Fourth, LeVier Associates' "Little Toni," Van Nuys, Calif., piloted by Tony LeVier; time, 12:37.44; speed, 157.883 mph. Fifth, Chester Loose's "Loose Special," Davenport, Iowa, piloted by Warren Siem; time, 13:10.-35; speed, 151.309 mph. Sixth, Bill Robinson's "Suzy Jane," Burbank, Calif., piloted by Robinson; time, 13:-51.03; speed, 143.902 mph.

Goodyear purse division was as follows: Brennand and Wittman, $8,500; Penrose and Chester, $4,850; Salmon and LeVier, $2,900; LeVier, $2,800; Siem and Loose, $1,600; Bill Robinson, $1,160; William Falck, $1,050; Charles W. Bing, $790; Dwight Dempster, $750; William Taylor, $200; Mike Agrandar, $135 and Eugene Smith, $100. One hundred and five dollars of the $25,000 purse was undistributed.

Participants agreed there was too little time for preparation. Most of those who qualified were barely able to get under the wire with last-minute finishing touches. There was more than one instance of a hard-working crew failing to complete their airplane in time, even after working day and night for a month or so preceding the Labor Day weekend.

However, the Goodyear events were run off without an incident, a total of 45 entering the several heats and finals and 45 finishing. One racer, entered by Falcon Airways, Reidsville, N. C., developed wing flutter in preliminary testing the week before the races and the pilot was forced to jump, getting down safely. Another racer showed structural failure both in the empennage and wing in preliminary tests to qualify for safety restrictions. Prior to the race each airplane actually met all specifications, including 6 G's at 175 mph. indicated, 4 G's at about 220 mph. indicated, and pylon turns by actually flying the course.

Racing pilots agreed with the spectators that the Cleveland course was not as well located as it should have been. The pilots had proposed a course entirely on the airport and in full view of the stands. But officials refused to halt scheduled airline traffic in order to accede to the racing pilots' request. Instead, only the finish line and No. 1 pylon remained on the airport in front of the stands, the other three turns being to the rear and off to the right.

Big-Time Circuit Expected

President Chester of the Racing Pilots Association looks for considerable midget racing about the country in the near future. "Judging by the amount of interested inquiries received since the races," he reports, "there will be many more ships in this class for the 1948 National Air Races. However, we intend to have other races before then. It is our hope that a regular circuit of these midget meets will be established in addition to four or five big regional meets to be held annually in various parts of the country. We are off to a good start and all indications are that it will prove to be the most popular type of air racing yet devised."

Chester says his 1947 "Swee' Pea" is only the beginning of his revived participation. "I thought I was through with racing," he explained, "but Swee' Pea is the first of three racers I am building."

Tony LeVier also sees new life for air racing. "With proper supervision and control of this little 190-cu. in. class, I feel we will have races more frequently than in the past," he said. "Out here in L.A. we feel air races twice a month will be feasible. The percentage of airminded people is high and midget races will attract them. It will induce airplane owners to enter competition themselves. It will foster more individual design. This can very easily snowball into something big. Competition of this type could also be a very profitable business."

From others have come suggestions for a larger cash outlay for the 1948 Nationals and it is reported that Goodyear will sweeten the pot somewhat. A few suggestions have been offered proposing a second midget category for the Nationals. A second category, it has been suggested, should encourage 125-hp. engines or 165-hp. engines. But as a starter it appears that Goodyear hitched its star to a "natural" by supporting the midgets. While only 13 planes reached Cleveland out of 20 or so which were built or modified this year, the number of hopeful entries is expected to balloon to about 200 next year. ★ ★ ★

Pylon turns (below) in Goodyear race were usually hotly contested. Participants worked on racers between events, as Bill Robinson is doing astraddle his modified Brown (above). Beauty in curves is shown by Chester Loose's racer (left.)
(SOUTHERN FLIGHT Photos by Hans Groenhoff.)

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Trade-Ins Seen as Major Factor by Florida Operator

WHILE many operators look upon trade-ins as a necessary evil incidental to the sale of new aircraft, Carl Wooten, Wooten Aviation Industries, Orlando, Fla., takes a different viewpoint on the subject and now is setting up plans to make the trade-ins a major function of his operation.

Wooten's ideas are outlined as follows:

"Actually a trade-in should be looked upon with added favor because (1) it offers an opportunity for added profit (I have sold trade-ins for more than I gave for them) and (2) the sale of a trade-in establishes contact with a new customer who (3) becomes a good prospect for a new airplane a year later via the trade-in route again. In addition to this, (4) used planes are usually easier to sell than new ones because 'the lower the price, the broader the market.' We once repossessed a used plane which we sold three different times—accepting it each time in trade on a new airplane. This used airplane was, therefore, directly responsible for three new plane sales.

"It is my thought that after we have reached the end of our present backlog, our new plane sales could be increased from 50-100 per cent through trade-ins. If we don't find some way of handling trade-ins, then on this basis, we can expect only half as much business as is available to us."

Turning to his own plans for tying trade-in sales into his operation, Wootten writes:

"First, we would have a good man heading up the used plane department who would do nothing but sell and promote the sale of used airplanes. Analyzing the work of a new plane salesman in relation to the used plane angle, we find that the new plane salesman in working on a new plane prospect generates and builds up in that prospect an interest which in the end results in his buying a new plane or his failure to do so. In the majority of cases this is determined by his financial ability or inability. He may be financially unable to buy a new Bonanza at $9,000 but it might be within his means to buy a good used Bellanca for $5,000. Therefore, the new plane salesman, having generated an interest and desire in the prospect to own an airplane, turns the prospect over to our used plane salesman while his interest is still fresh. The latter will have a good chance of selling him one of our good used planes. This is all in keeping with the realization that we have an investment in a prospect the minute we call on him in the form of sales expense. By following up the 'no sale' on new planes, we thereby have a good chance not only of regaining the sales cost invested in him in the first instance, but have a very good chance of selling him one of our used planes. This should give us a higher batting average on our prospects—in other words, more hits and less errors, resulting in a higher return on our sales cost.

"We in aviation have got to realize that the used plane is the problem of the aviation industry. It's the problem of the operators individually and collectively. We've got to solve it by working at it. We can't expect the government to rush to our aid and buy up every airplane that's more than a year old, dumping them into the sea, just so we fellows can have someone to sell an airplane to. We have got to create our own markets and prospects and solve our own problems, of which the used plane is a major one."

Lear Offers VHF Receiver, ADF and Automatic Pilot

A new and improved VHF Aircrafter radio including tunable receiver, and four new navigational aids including an electropilot, an automatic radio compass, an omni-range converter and a marker receiver, have been announced by Lear, Inc., and Gulf Aeronautics, Dallas distributors.

The new Aircrafter has a six-band transmitter and a three-band receiver. Transmitter bands include four VHF and two MF frequencies, while the tunable receiver covers 195-410 and 500-1500 kc. and 108-124 mc. The Aircrafter weighs less than 15 lbs. complete and occupies a panel space of 4 7/8 x 7 inches.

The new Electropilot Model 1-201 is intended for the automatic control of the attitude of aircraft in flight, and with additional accessories can be adapted for automatic take-off and landing, and automatic attitude control. Installed weight is about 39 lbs. and for airplanes already having directional gyros and artificial horizons only 29 lbs. The Electropilot is now available, but as yet no price has been announced.

The Model ARC-10 automatic radio compass is priced at $1,300 and is available in both single and dual versions, the latter giving bearing indication on two stations simultaneously. The instrument gives a continuous automatic bearing on any radio transmitter in the 200-1,750 kc. band simultaneously with aural reception. The antenna system consists of two rotatable loops independently mounted within a common low-drag blister, and a single-sense antenna of open wire or whip type. Weight of the single version complete with antennae is 24 lbs., 6 oz., and of the dual version 47 lbs.

The Model OML-1 omni-range converter is intended for use with the Lear VHF receiver to provide reception and indication of VHF omni-ranges and runway localizers, while the Model MBR-1 marker beacon receiver is intended to provide reception of the 75 mc. airway and instrument landing markers with both aural and visual indication. The former weighs 14 lbs. 14 oz. and the latter 7 lbs. 11 oz. Both operate off the standard 24 volt aircraft battery. No prices have been announced for these two instruments.

Protection for Beech Customers

Voluntary replacement of roll-welded wing skins with riveted skins on about 250 Bonanzas, at no cost to the owners, has been undertaken by Beech Aircraft Corp. In offering to assume this expense, which averages about $1,200 per airplane, Beech has explained in letters to owners of the airplanes having roll-welded skins that some of the welded wing skins have shown, in inspections, a minor and "relatively unimportant crack in the vicinity of some of the welded spots." The company emphasizes that, although these cracks "are of no structural significance at this time, they do indicate that the roll-welded skins will not stand up over the desired life of the airplane, on a par with riveted skins. For that reason they are being replaced. We are making the change merely because each customer is entitled to the best possible airplane that we can deliver for the price paid."

Assuring owners that no Bonanza with roll-welded skin has been involved in any accident "which might conceivably cast a shadow of doubt on the strength of the wings," Beech explained the company had discovered the condition itself and is prepared to spend several hundred thousand dollars to protect its customers against a future potential hazard.

All but about 250 Bonanzas were delivered with riveted wing skins. Owners are urged to write the company to schedule the modification of their airplanes, to be done at the factory. Each modification requires the airplane to be at the factory 36 hours, and five airplanes per working day will be modified. Each plane will be flight-tested before delivery. Those with the most hours or with actual weld cracks will be modified first. Meanwhile, those without cracks determined to be severe can be flown with safety, Beech explained.

NEWS IN BRIEF

The fifth annual meeting of the Aviation Distributors and Manufacturers Association will be held December 1-3 at the Hotel Adolphus, Dallas, Texas. Following the custom inaugurated last year, the first full day will be set aside for private conferences between distributor and manufacturer members.

The **Snyder Aircraft Corp.**, Chicago, was host recently to the Continental Motors sales and service clinic.

Eighty-three leading engineers and research experts attended the three-day **conference on spark plug maintenance and ignition** sponsored by the Champion Spark Plug Co. September 3-5. The conference started in Detroit and moved to Toledo for the last two days.

Luscombe Airplane Corp. on September 1 announced a **$200 reduction in the price of its 65-hp. Silvaire Standard**, bringing the list price down to $2,295 FAF. The reduction is effective until November 30, 1947.

T. P. Wright, Administrator of Civil Aeronautics, has warned seaplane owners that **unnecessary noise and utter disregard for others engaged in water sports and fishing will make the seaplane an unwelcome visitor** at water resorts all over the country. He said that the remedy was a quiet plane, but that until that was available, flyers must make all corrections possible by adjusting their methods of operation.

Following a comprehensive flight test program, the **CAA has approved the Bell Model 47-B helicopter for night contact operations.** Conventional navigation lights mounted at either side of the cabin and on the tail boom are used. A 250-candlepower headlight is mounted at the front of the cabin.

A new Part 48 of the Civil Air Regulations provides that **moored balloons** having a diameter of more than six feet or a gas capacity of more than 115 cu. ft. must not be operated closer than 500 ft. to the base of any cloud, during the hours of darkness, when ground visibility is less than three miles, at altitudes more than 500 ft. above the ground, or within five miles of the boundary of an airport without a permit having first been obtained from the CAA.

Aircraft Industries Association figures show that **999 personal aircraft were delivered during August** by 11 companies, as against 994 shipments by 13 companies in July. Since January 1, 12,696 personal planes have been delivered. Dollar volume in August was $3,642,000 as against $3,666,000 in July. Deliveries by companies for August (with January-August totals in parenthesis) were as follows: Aeronca — Super Chief 9 (170), Champion 6 (441), 65-hp. Chief 6 (285), Scout 10 (61), L-16 87 (87); Beech Bonanza 170 (743); Bellanca Cruisair 9 (185); Cessna — Model 120 62 (914), Model 140 59 (1,174), Model 195 2 (2); Erco Ercoupe 52 (695); Funk Bee (24 in 7 months), Luscombe Silvaire 113 (958); North American Navion 61 (842); Piper—Cub Special 49 (776), Super Cruiser 55 (2,051), Cub Trainer 46 (295); Republic Seabee 16 (764); Stinson Voyager 165 (1,992); Taylorcraft (132 in 7 months); Temco Swift 22 (39); totals 999 (12,696).

12 Goodyear Amphibians Going to Operators on Unusual Lease Basis

GOODYEAR Aircraft now has placed three GA-2 Duck amphibians in operational service under a unique lease arrangement through which it hopes to determine market potentials and other operational data before embarking on a full-scale manufacturing program. Art Chapman, manager of the Duck project, was in Texas last month considering applicants for the fourth airplane.

All told, the Goodyear program calls for the leasing of 12 airplanes to operators in this country and abroad. Airplanes already placed have gone to Atlantic Aviation Corp., New York, N. Y., Northeast Aviation, Portland, Maine, and Fliteways, Inc., Milwaukee, Wis. Of the remaining nine airplanes which will be built for the program, one more will be placed in the East, three in the South and Southwest, and one on the West Coast. The other five are destined for export.

The Goodyear lease arrangement is unique in that the operator pays nothing for the airplane other than assuming the cost of operations and maintenance, provided he lives up to the terms of the contract. Upon any failure to live up to these terms, however, he must pay $75 a day from the date of the failure until the failure is remedied. Goodyear further provides all-risk insurance to the amount of $6,000 with the operator responsible only for the first $600 which is deductible.

Terms to which the operator is bound in return for the use of the airplane include maintaining and furnishing to Goodyear detailed reports including a daily pre-flight inspection report, daily operational report, weekly operational cost report, airplane and engine logs and survey questionnaires; inspecting and checking the entire airplane after each 25 hours of flying time; and keeping the airplane in good condition and repair.

The operator further agrees to operate the airplane a minimum of ten hours a week, weather permitting, of which a minimum of 50 per cent shall be in water operations.

The GA-2 Duck is a three-place amphibian powered by a 145-hp. engine. Top speed is 125 mph. and cruising speed 110 mph. Useful load is 750 lbs. Price at which the Duck will be offered if and when Goodyear decides to place it in commercial production is reportedly in the $4,000 bracket. However, Goodyear representatives will not discuss price at the present time since the airplane is not for sale, and will not be for sale until the results from the operational testing are in and analyzed. ★ ★ ★

Les Bowman's New Firm to Sell and Service Ryan Navions

Leslie H. Bowman of Fort Worth announced on Oct. 1 the formation of his new operation, General Aeronautics, Inc., and his appointment by Ryan Aeronautical Corporation as Southwest distributor for the 4-place Ryan Navion. Associated with him are Jack Allen and William Fate, who were with him in Aircraft Sales Co., until their interest in that firm was sold recently.

"Our new company will be concerned only with sales and service of Navion aircraft," Bowman said. "Ryan will deliver our demonstrator soon. We expect limited production this Fall of the new improved Ryan Navion, with full-scale production during 1948. Complete parts and equipment for servicing will be installed by us for Navion servicing."

Bowman announced his plans on returning from Wyoming, where he spent the summer fishing and hunting. During the trip his wife, Marty, found a watch he lost a year ago on a remote trail 11,000 ft. up in the mountains. The watch, a gift from National Aviation Trades Association which he headed as president, ran perfectly after being wound.

Bowman will announce location of his new operation soon. At present his address is Meacham Field, Fort Worth. He was leading distributor for Piper and Stinson airplanes last year.

Beech Adds Dallas, Ft. Worth to J. D. Reed Distributorship

Beech Aircraft has added a 56-county Texas area including Dallas and Fort Worth to the territory of the J. D. Reed Company of Houston and New Orleans, Beech distributor. G. E. Penn, head of Dallas Aircraft Sales, former Beech distributor in North Texas, will now direct Beech

sales and service in Northeast Texas and Northwest Louisiana from headquarters at Gregg County Airport, Longview, with Currey Sanders handling sales and service in North Louisiana. Jim Gray, formerly with Penn and Sanders, has entered the butane gas business in Memphis, Tenn., with Freddie Lanier, former aviation leader in Memphis. Reed will operate a Dallas branch of his business for Beech sales and service. Pinky Hutchins is salesman in the Dallas branch. In another Texas revision, Beech established a direct factory dealership with Shelby Kritser's Tradewind Airport Corp., at Amarillo, including the Oklahoma panhandle in his territory.

OPERATIONS

New branch offices in Tampa, Fla., and New Orleans have been opened by Aviation Supply Corp., of Atlanta. which also operates branches in Nashville, Charlotte, Miami and Orlando.

Piedmont Aviation, Inc., Smith Reynolds Airport, Winston-Salem, N. C., has become distributors for U.S. Rubber Co.

Grand Central Airport, Glendale, Calif., recently barred two private fliers from using its facilities as a result of their failure to heed repeated requests to cease indiscriminate buzzing. Field Manager Charles (Chief) Kidder said they will no longer be permitted to use the field, its hangar space or facilities.

In its second expansion since purchasing Bob Trader Aero Supply in Pittsburgh recently, Durham Aircraft Service, Inc., has moved into a new two-story headquarters building at 56th Street and Northern Blvd., Woodside, Queens, N.Y. Latest IBM accounting machines will provide daily inventories of stock at branches in Detroit, Tulsa, Bradley Field, Conn., Flushing, N.Y., and Pittsburgh. Robert M. Durham, president, said his operating expenses will be cut 30 per cent by the move into new quarters. He promoted Frank T. Fisher to be a vice president.

Snyder Aircraft Corp., has opened modern service shops at Chicago Municipal Airport. Snyder also operates out of Denver, Columbus and Omaha.

A new headquarters building on Alamo Field, San Antonio, has been occupied by Western Aero Supply, with adequate display and storage.

Marshall's Field and Bennett's Flying Service, Clearview Airport, both in Dallas, have obtained contracts from the ground army to furnish lightplane flying time to reserve liaison pilots. Bennett's contract was for 1,480 hours over a period of ten months at $8 per hour in 2-place craft, according to Benny A. Lozano, manager.

Dallas Aero Service recently modified a P-47M for Bill Odom, of Reynolds Bombshell fame, to fly in the Bendix race. It was prevented from making the race, however, by last-minute troubles.

A "Cessna Skyline Club" has been organized by King Cruse of San Benito Flying Service in South Texas, using a plan to encourage cross-country rentals in 2-place Cessnas at $9 per hour with a slight overnight additional charge for flights under 500 miles. Most popular routes used by club patrons are to San Antonio, Corpus Christi, Monterrey and Mexico City.

WHAT'S NEW

An "icing and thunderstorm weather dial" has been developed by the Army to provide an instant reading to pilots of what to do under various hazards. Its inventor, Samuel Kramer, a supervisor of the Weather and Instrument Course at the Base Instrument Flying School, Patterson Field, Dayton, Ohio, says the dial lists all possible types of icing and thunderstorm hazards, the reasons and intensity of the conditions, and flight procedure through storms. The top disc has cross-section diagrams of hazards. By proper turning of the dial, the bottom disc will

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show all weather conditions and the immediate flight procedure for passing those hazards with minimum risk.

A new electronic engine analyzer by means of which aircraft engine troubles can be positively located and identified during flight has been announced by the Sperry Gyroscope Company. The analyzer shows by means of a cathode ray scope not only which engine is malfunctioning but which specific part of the engine is the primary cause. The device has been tested extensively on overseas flights in a Pan American Airways Constellation.

A new system for automatic feathering of propellers has been developed by Consolidated Vultee Aircraft Corp. for use on the Convair Liner. The system provides automatic feathering in case of an engine failure on take-off, and while designed for use with Hamilton Standard Propellers can also be adapted to the Curtiss Electric type.

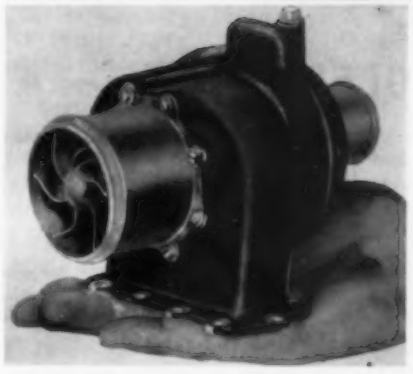
An automatic distribution system for **approach and landing charts on an annual subscription basis** has been inaugurated by the Coast and Geodetic Survey. Limited to users of 20 or more copies of a single chart, the system furnishes all revisions immediately they become available at a cost of 5 cents per chart per year.

A new Autoflight angle of pitch and yaw vane transmitter has been announced by G.M. Giannini & Co., Pasadena, Calif. Vanes are geared to microtorque potentiometers which need only .003 oz. in. of torque to transmit a signal.

Anti-corona antenna fittings, developed during the war by the Air Materiel Command, will soon be made available to all aircraft users by Dayton Aircraft Products, Dayton, Ohio. The fittings are insulated to prevent corona discharge or St. Elmo's fire, thus reducing precipitation static in radio equipment.

The Sandscott Plastic Expanding Anchor is a development of Holub Industries, Inc., Sycamore, Ill., to **anchor screws in any and all materials.** The anchor has overlapping internal and external slits which provide "concertina" expansion.

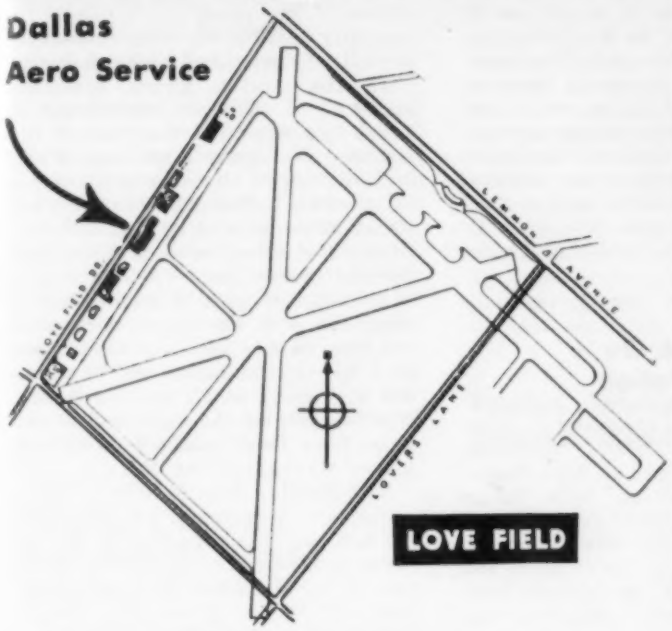
A thermostatically controlled heating and ventilating system is standard equipment on the Mallard, Grumman's new amphibian. Equipment used is the Janitrol whirling flame combustion type heater, manufactured by the Surface Combustion Corporation of Toledo. The unit controls temperature by means of cabin thermostats which regulate both fresh air and combustion air by means of ram pressure while the plane is in flight and by blower when it is on the ground.



VHF TRANSMITTER by National Aeronautical Corp., Ambler, Pa., no bigger than pack of smokes, and weighing 11 ounces (top), gives VHF transmission when attached to a regular lightplane transmitter. Selector switch permits any of six VHF channels or standard 3105 kc. to be used. **MIDGET TURBINE** for airplane refrigeration (lower) by AiResearch Mfg. Corp., Los Angeles, can drop air temperature passing through it 135 degrees and when combined with a heat exchanger as much as 400 degrees. It cools jet fighter cockpits.

PERSONALLY SPEAKING—

HAROLD CROW, a former president of Air Associates, is now general sales manager of Pacific Airmotive Corp., Burbank, which also has promoted WALLACE O. LEONARD to be vice president in charge of its Pacific Division. . . . C. B. STEVENSON has been named airline sales representative for nine states served by the Chicago branch of Air Associates. He was formerly with United Air Lines. . . . JOHN HUNTINGTON LANCASTER, formerly Eastern editor of Flying magazine, has become public relations director of Stinson Division of Convair, Wayne, Mich. . . . COL. LUKE HARRIS has been elected a director and vice president in charge of sales of Lockheed Aircraft Service, Inc., headquarters in Burbank. Former PCA vice president, he was head of his own firm before joining Lockheed. . . . . THOMAS T. HINMAN has moved from PCA to Lockheed Aircraft Service as sales representative in New York. . . . WILLIAM L. HAUCK has been named eastern sales manager of the Weatherhead Co., of Cleveland.



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Miami Air Maneuvers Cards Midget Races For January Program

Events for 190-cu. in. (85-hp.) racers, abandonment of stock airplane races and daily F-51, P-38 and P-63 races with a free-for-all final feature plans for the 16th annual All-American Air Maneuvers January 9-11 at Miami-Navy Master Airport, Miami, Florida.

New management, under direction of S. C. (Jiggs) Huffman, is arranging the program, to be staged by a nonprofit corporation, sponsored by the Greater Miami Airport Association, assisted by the Miami chapter of the Florida Air Pilots Association and sanctioned by NAA. Offices are at 1034 duPont Building, Miami 32, Fla.

New CAR Part 60 Now in Effect

Revisions of existing Part 60 of the Civil Air Regulations, which forbid acrobatic flying over settled areas and within civil airways and control zones, forbid any flying close enough to "create a collision hazard" and establish new minimum altitudes, go into effect on October 8. Over populated areas planes must be flown at least 1,000 feet above the highest obstacle within a horizontal radius of 2,000 feet. All airports with right-hand traffic patterns must be marked with visual markings under standards established by the CAA.

Slick Challenges Certificated Carriers

Earl Slick of San Antonio, Texas, president of the air freight line bearing his name and president of the Independent Airfreight Association, last month announced that the independents were ready to carry air mail without subsidy at 18 cents a ton-mile as an answer to recently published reduction of freight rates by several certificated carriers to as low as 12 cents a ton-mile. "As a strange coincidence," Slick charged, "this drastic reduction was limited to the principal points served by us and to the commodities constituting our greatest volume. The Independent Airfreight Association will protest the approval of this untenable tariff and demand an end to air freight rate wars financed with public funds through the air mail subsidy."

Tycoons Agree On Convair Separation

Floyd B. Odlum, president of Atlas Corporation, and Victor Emanuel, chairman of the board of Avco Manufacturing Corporation, both major stockholders in Consolidated Vultee Aircraft Corporation, have approved a plan of separating the aviation and non-aviation assets of Convair, with the Odlum interests retaining the aviation properties.

Admitting that the short-range outlook appears rather dismal. Odlum said that Convair's long range prospects were promising. "Atlas has never undertaken to manage enterprises but only to assist as a major stockholder in their rehabilitation or development," Odlum asserted.

NEWS IN BRIEF

Sperry Gyroscope Company has announced a program to contract with other companies to utilize precision machining and assembly skill available at the Great Neck, New York, Sperry plant.

Delta Air Lines has purchased a Hughes radar collision warning indicator for test purposes. . . . newly established Piedmont Airlines is installing the Hughes radar devices on all their DC-3's. . . . T. E. Braniff told the New York Society of Security Analysts last month that passenger fares and air mail pay must be increased if the industry is to remain financially healthy. His own company's payroll will rise over $600,000 during 1947, the veteran airline president stated. . . . The Civil Aeronautics Board has approved the sale of the Denver-Los Angeles route from Western Airlines to United Air Lines for $3,750,000. . . .The Air Transport Association has announced that U.S. certificated airlines have doubled their fleet of planes since VJ Day. Planes in operation August 15 totalled 913 as compared with the 440 in service on the same date in 1945. . . . Safe Flight stall warning indicators will be standard equipment on all Convair Liners. Nearly 1,000 of the light weight devices have been installed on private planes throughout the U.S.

PERSONAL: John R. Alison, recently appointed Secretary of Commerce for Air, has been appointed to the National Advisory Committee for Aeronautics by President Truman. . . . Joseph F. McCarthy and Rear Admiral Lawrence B. Richardson (ret.) have been elected vice presidents of Curtiss-Wright Corporation. . . . Dr. W. L. Barrow has been appointed chief engineer of the Sperry Gyroscope Company. . . . Lockheed general sales manager Leonard K. Schwartz has announced the resignation of assistant general sales manager Roger Lewis. . . . W. F. (Bud) Rogers has been elected vice president in charge of sales and traffic for Slick Airways, Inc., and Thomas L. Grace has been elected vice president in charge of operations. . . . W. R. (Bill) Beattie will represent Braniff International Airways at the five-week conference of the International Air Transport Association in Rio de Janeiro to begin September 27. . . . Veteran pilot Roger Q. Williams has joined Transocean Air Lines of Oakland, California, as director of training. . . . Porter Norris, veteran Pan American district sales manager, has been elevated to the post of traffic manager for the Latin American Division of PAA, replacing John E. Muhlfeld, who moves up to general sales manager for the company. . . . Materials Director George J. Brandewiede has announced the appointment of L. A. Slauter as director of surplus sales for American Airlines.

JOHNSON AIRCRAFT CORPORATION of Grand Prairie, Texas, has purchased the Stewart Aircraft Company factory site (above) on Stewart Airport at Tyler, Texas, according to R. S. Johnson, president of the firm bearing his name. Johnson, who was associated with the development of the Alexander Bullet, the original Swift and the Johnson Rocket, has designed and is building an all-metal two-place high performance 125-hp. model known as the Bullet. Flight tests are expected to begin in October.

Johns to Outdoorsman

Russell C. Johns has resigned his position as vice president and general manager of Air Review Publishing Corporation, publishers of SOUTHERN FLIGHT, to join the Outdoorsman Publishing Company, 814 N. Tower Court, Chicago. Johns joined Air Review in May, 1946, following three years of active duty with the U. S. Army Air Forces. Prior to the war he was assistant publisher of Aero Digest, Sportsman Pilot and Revista Aerea with headquarters in New York.

Non-sched Air Freight Exceeds Air Express And Airline Freight

Air freight ton-miles flown in the U. S. during 1946 by non-certificated air cargo lines exceeded the combined air express and air freight ton-miles flown by all certificated airlines, according to a national air cargo survey recently completed by the Department of Commerce. The figures are 47,000,000 ton-miles flown by non-certificated carriers as compared with 33,000,000 ton-miles of air mail, 24,000,000 ton-miles of air express and 19,000,000 ton-miles of air freight flown by certificated airlines. The total amounted to 123,000,000 ton-miles.

Practical Limits for High Altitude Flying Raised by Research

While military aircraft operated at ceilings of 30,000 to 38,000 ft. during the war, recent research and development will make practical military ceilings from 40,000 to 50,000 in the "near future" with commercial airline ceilings "safe, economical and comfortable" at 25,000-ft. altitudes, according to N. D. Showalter, Boeing Aircraft flight test chief.

Problems involved and new developments were discussed last month at a Boeing-sponsored symposium on high-altitude flight at Seattle, attended by over 250 aviation leaders including research, manufacturing, airline and military specialists. A plea was made for minimum Federal regulations to "realize full advantages with high-altitude airplanes design."

Showalter said Boeing flight crews have spent more than 1,300 hours above 25,000 ft. and conducted more flying at or above 40,000 ft. "than all the rest of man collectively" during the last five years.

Florida Airway Map Again Available Free

The Florida State Improvement Commission has resumed publication of its official airway map of Florida, distributed free to pilots and airplane owners through the 96 licensed airports in the state. Aviation Supervisor William C. Lazarus said individual requests sent to the Commission at Tallahassee, Fla., must be accompanied by six cents in stamps to cover mailing costs. The map, in three colors, shows magnetic courses with mileages between principal cities, highways, railroads, lakes, rivers and prominent terrain features adequate for dependable navigation.

CAP Cadets Can Ride With National Guard

Civil Air Patrol cadets are now permitted to fly with National Guard pilots under certain conditions for orientation flights in C-47, AT-11 and AT-6 airplanes. Major General Butler B. Miltonberger, chief of the National Guard Bureau, said they must have parental or guardian consent and flights will be limited to daylight hours and local flying, excluding formation flying, gunnery or other hazardous flight.

WNAA Officers Visit Kansas City Unit

Mrs. Eileen Connell Caraway, president of the Kansas City unit and second vice president of the national organization of the Women's National Aeronautical Association, was in charge of entertaining the national officers of WNAA who arrived in Kansas City September 20.

Mrs. Richard V. Porter, national president, from Los Angeles, California; Mrs. C. C. Davis, national treasurer from Fort Smith, Arkansas; Mrs. Leland Read, national secretary from St. Louis, Missouri; and Mrs. Winifred Ralls, national parliamentarian from Salt Lake City, Utah, were in the party.

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JUST AMONG OURSELVES

(Continued from page 6)

to predict at this time, or to measure accurately, the benefits that will accrue to aviation progress from the Goodyear-sponsored backyard designs. But one thing is sure; a revival of the kind of air racing that justified the National Air Races in prewar years promises now to justify them in the years to come. The industry has assurance that competitive racing might once again produce technical developments as valuable contributions to the safety, speed, dependability and usefulness of aircraft.

Like so many other industry spectators, we were left cold by the Thompson Trophy Race in which souped-up and obsolete "flying barn doors" from the military surplus junk piles competed for the $40,000 prize money over the 20-lap, 300-mile course. We feel this money went down the rat hole and that the unfortunate death of participant Tony Jannazo, as well as four other accidents during the race, are not justifiable. However, we all must remember that the Thompson is for the fastest time over a closed course for reciprocating engine powered aircraft, and true to its original and advertised purposes, established a new record.

The same was true this year in the Bendix race in which Paul Mantz pushed his P-51 across two-thirds of the nation to repeat his last year's winning performance, much to the boredom of people who would like to see the National Air Races contribute more materially to aeronautical progress.

We believe that the generous sponsors of the National Air Races realize as much as anybody else that there is no quicker way to seal the doom of the Nationals than to continue to pour good prize money down the rat holes created by the unfortunate postwar conditions which have permitted worn out military surplus to dominate the racing program. It behooves these sincere people to plan the 1948 program at once so that competition will return to the American air classic in greater force, with prize money and race requirements announced far enough in advance to stimulate healthy competition.

We commend the air race management for including such constructive demonstrations as the gliding and soaring team, the CAA cross-wind landing gear and magnificent displays of flying technique as demonstrated by the Navy's "Blue Angels," Jimmy Granere and Bevo Howard, together with public exhibitions of jet, "Jato" and helicopters.

It will not be an easy task to devise competitive events which will stimulate original design and eliminate World War II surplus aircraft. But it will have to be done if the critics who want to see the National Air Races eliminated are to be silenced.

★ ★ ★

Airmen's Calendar

Oct. 10-13—Southern California Air Races, Long Beach.

Oct. 24-26—Air Day in Texas, Harlingen, Texas.

Oct. 26-28—National Association of State Aviation officials, Ft. Worth, Tex.

Nov. 4-7—National Airport Show and Institute, Cleveland, Ohio.

Nov. 19-22—5th Annual National Aviation Clinic, Illinois state capitol, Springfield, Ill.

Dec. 1-3—ADMA Annual Convention, Dallas; George Jalonick, chairman.

Dec. 4-7 — International Aviation Celebration, El Paso.

Jan. 26-28 — Fourth Region Non-Scheduled Operators Meeting, Ft. Worth; William F. Berry and George E. Haddaway, co-chairmen.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACTS OF CONGRESS OF AUGUST 24, 1912, AND MARCH 3, 1933, OF SOUTHERN FLIGHT, published monthly at Dallas, Texas, for October, 1947.

State of Texas, }
County of Dallas, } ss

Before me, a Notary Public in and for the State and county aforesaid, personally appeared Fred N. Stones, Jr., who having been duly sworn according to law, deposes and says that he is the Business Manager of SOUTHERN FLIGHT, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to-wit:

1. That the names and addresses of the publisher, editor, managing editor, and business manager are:
Publisher: Air Review Publishing Corporation, Dallas, Texas.
Editor: George E. Haddaway, Dallas, Texas.
Managing Editor: Thomas Ashley, Jr., Dallas, Texas.
Business Manager: Fred N. Stones, Jr., Dallas, Texas.

2. That the owner is: (if owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.)
Air Review Publishing Corporation, 1901 McKinney Ave., Dallas, Texas.
Stockholders: George E. Haddaway, Thomas Ashley, Jr., Fred N. Stones, Jr., Dallas, Texas; Russell C. Johns, Ravinia, Ill.

3. That the known bondholders, mortgagees, and other security holders owning or holding one per cent or more of total amount of bonds, mortgages, or other securities are: NONE.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company, but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stocks, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the twelve months preceding the date shown above is: (This information is required from daily publications only.)

(Signed) FRED N. STONES, JR.,
Business Manager.

Sworn to and subscribed before me this 15th day of September, 1947.

(Signed) MRS. LOUISE ROBERTSON,
Notary Public.

My commission expires June, 1949.

COMPLETE VHF

(Continued from page 18)

ceivers. There also is no surplus of this type. Fox reports that the transmitters are easy to design and manufacture, but that the tunable VHF receiver must be stable on all frequencies, multiplying the engineering problems by "infinity." Thus, considerable time is being devoted to design before the launching of new and competitive production.

Persons acquiring former military aircraft, equipped with the crystal-controlled SCR 522 transmitter and receiver, have discovered that what was good for Uncle Sam isn't necessarily so hot for the civilian flier. Two of the equipment's four transmitting channels (122.1 mc. and 122.5 mc.) are okay for range and tower work, respectively, but the receiver can only work on four channels. To be effective, it must cover seven—111.1, 116.1, 118.1, 118.3, 118.5, 118.7, and 118.9 megacycles.

Here's where know-how comes to the rescue again. Fox has gained quite a name for himself by modifying the above-mentioned receivers to work on the proper channels. The cost for this job is a nominal $50, plus parts. Thusly changed over, it compares favorably with the postwar civilian models for communication only. However, it is satisfactory only for large aircraft since it weighs about 100 lbs.

Another fix-it for the surplus owner's dilemma is for him to retain his good SCR 522 transmitter and, instead of having his receiver modified, to buy the ARC C15 tunable VHF receiver. Fox has a complete display of VHF units for demonstration purposes. Believing VHF is the answer to the pilot's prayer, he is anxious to discuss it with any who care to visit him.

THE FUTURE

(Continued from page 11)

30 per cent increase in registrations each year, averaged throughout the whole period between now and 1955, will come about. There will be periodic departures from a straight line variation. It will require, however, substantial improvements in design over the prewar models which are still being sold. There is shown in Fig. I a series of curves portraying the increase in students, in pilots, in aircraft and in aircraft production, from 1938 to the present time. Even with a drop in sales in 1947 and 1948 the registration figures will still be substantially above the forecast.

Utility

I have emphasized my belief in the need for concentrating development efforts on the 4-place or family plane. In Fig. II, it will be noted that in 1946, 2-place planes predominated, but that the curves crossed at the end of the year, with substantially the same sales this summer, although in terms of airframe weight, the importance of the 4-place plane market is shown to be greater than the 2-place. Involved in the factor of size is comfort, where adequate space is necessary, including suitable space for luggage.

To have the appropriate relationship in speed compared to the auto, I place this important item at 150 mph. cruising. This is sufficient, when allowing for adverse winds, to give a speed margin compared to cross-country auto travel of three to five times, which I feel is all that should be attempted for some time to come. I believe any speeds which could be achieved in excess of 150 mph. should be sacrificed to improving other characteristics which involve design compromises with speed.

Items which should be improved to the maximum extent possible, after achieving 150 mph. cruising speed, are: Decreased take-off distance, increased rate of climb, and lowered landing speed. This latter item I believe to be essential from the standpoint of ease of flight and reduction of training time, as well as safety. I would like to see stalling speed at 45 mph., which makes possible 40-mph. landing speed.

Our program of cross-wind landing gear development, it is hoped, will prove to the industry the importance of universal adoption of a landing gear that would permit safe cross-wind landings under any condition. Of three types now flying, two have been flown by more than 100 pilots with the most surprising uniformity of approval for the device that it has been my experience yet to witness for new developments of this kind. Because of the extremely favorable results achieved so far I have no hesitation in predicting the universal adoption of the caster cross-wind landing gear for personal aircraft, with very substantial uses on many, if not all, other types as well. Small increases in weight and cost will be insignificant in comparison with added advantages.

Safety

An analysis of private flying accidents indicates that about 33 per cent occur in normal landing, 20 per cent because of forced landings, 15 per cent by collision with objects, 11 per cent in taxiing, about 10 per cent due to stall or spin, with 11 per cent due to other causes. This emphasizes the need for many improvements in the aircraft.

First, there is that major source of accident, the falling off from a stall into a spin. Forty-three per cent of fatal accidents are attributed to falling off from a turn. Aerodynamic properties which prevent a spin occurring from a stall are freedom from tendency

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to roll during pitch and possibly limitation of elevator motion. An entirely practicable and readily available aid is a simple stall-warning device. Rapid recovery from a spin, say 1½ turns, is necessary should the autorotating condition be reached.

Here I would like to make a plea for increased rate of climb as an accident inhibitor. Statistics indicate a decrease in stall-spin accidents with increase in rate of climb. I suggest that not less than 500 fpm. under standard air, sea level conditions should be achieved.

Next is need for care in obtaining positive static and dynamic stability, qualities in the aircraft that require of the pilot less constant attention to his controls and make for ease of flying. The two-control system aids in this same direction.

Gains for safety can be secured by preventing overloading and an improper distribution of load that creates large shifts in CG. Thus, design should be based on the premise that, with full gas and oil tanks and 170 lbs. in every seat and all luggage in place, gross weight will not be exceeded nor improper balance obtained. The design of a weight and balance indicator would be important.

Design for ease of maintenance will contribute toward proper maintenance. Improved visibility will help eliminate collision and taxiing accidents.

If a plane incorporating all these features were to be designed and should it be placarded against acrobatic maneuvers, a weight compensating reduction in load factors would, I believe, be permissable with a substantial improvement in overall safety. A desirable added feature would be attainment of a large increase in stick force per "g", reaching possibly 45 lbs. at load factor of three.

One final device for improving safety is a "flight operating characteristics indicator." This would make readily available to the pilot essential airplane characteristics such as take-off distance, best climb speed, maximum rate of climb, landing distance, indicated stalling speed (with zero and full flap), all under combinations of variables, gross weight, airport altitude, temperature and wind velocity. With several variations each for these variables, 150 tables of data would result. A display box has been devised experimentally which permits very rapid selection of the proper table (tables printed on a roll of paper for turning for pilot view through display window.) By having accurate knowledge of the aircraft's characteristics under varying conditions, safety would be enhanced.

However, in all such analyses, a dual approach must be made—one aiming at the improvement of the aircraft, another at the education of the public. Coupled with the important need for making our flying public safety conscious and in improving the airplane to such an extent that it is inherently safer to operate, is the important need for designing for what may be termed "accident survival." Improvement in cockpit design and strength, the introduction of general use of the shoulder harness as against the safety belt, plus many other design innovations (which will not in general make for increased cost) are known. These will minimize injuries.

It is obviously desirable to be able to use the same basic vehicle when traveling in the air or on the ground. A development of considerable interest, aptly called the "flying automobile," points toward the removal of everything that is involved in flight at the time the wings are removed on the ground. Possibly some market for the ground vehicle alone would exist, perhaps as a first step toward ownership of the combined air-road machine. Other possibilities for this type of vehicle are its use in the so-called "you-drive-it" field.

Requirements Summarized

Let us now recapitulate the characteristics that the discussion so far has indicated should be attained in this personal aircraft in order to provide the utility that will attract a large market, and will thereby permit reductions in price; a utility, in short, that will put in motion a benevolent spiral that will lead to a goal of importance for private flying.

Size and General Arrangement: 4-place, with adequate space for luggage. Gross weight of 2,500 to 3,000 lbs. (empty weight of 1,550 to 1,800 lbs., and airframe weight of 1,000 to 1,200

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lbs.). Low-wing arrangement, possibly a pusher. Unrestricted pilot view at all times. About 200 hp. Tricycle landing gear.

Performance: 150 - mph. cruising speed. 40-mph. landing speed (45-mph. stalling speed). 500-fpm. minimum sea level rate of climb.

Safety Features: Non-vicious spinning characteristics (not spinnable or rapid recovery). Two-control (optional). Stall warning device. Flight operating characteristics indicator. Simplification of engine and propeller controls.

Special Equipment: Low external noise level (also internal for comfort). Radio receiver and transmitter. Range receiving equipment. Consideration of use of gas turbine-propeller combination. Castering wheels for cross-wind landings.

The Helicopter

Obviously, the helicopter possesses many characteristics that make it a potentially important contender for the personal aircraft market. Yet it is presently very expensive, both initially and to maintain, slow in speed and subject to vibration troubles. It is in a very early stage of development, so that final form or configuration has not crystalized nor research become available on which to lay a firm foundation for ultimate solutions. Possibly a combination of fixed and rotary wings will be developed to permit realization of the advantages of both in one air vehicle.

All-Weather Flying

The airplane can only be used for extensive cross-country travel possibly 75 or 80 per cent of the time unless suitable aids to air navigation are incorporated, and with them possibly 90 to 95 per cent on the average. The problem of incorporating the airborne equipment necessary to use all of the electronic ground aids now being provided is a serious one. Weight and expense make many of them prohibitive from the standpoint of the personal aircraft owner. However, some aids now being installed are suitable with very little added weight or cost of airborne equipment. For example, there is the VHF omni-directional range which will permit navigation without need for use of the airways. With nationwide coverage by these ranges the private owner flying a plane with suitable receiving equipment can find his way from any place to any other location in the country.

The problem of landing under instrument conditions is, however, more difficult to solve. The GCA system is obviously suitable for the private flier as he needs no other airborne equipment than his normal radio receiver. However, the cost for nationwide coverage of such stations would be tremendous and prohibitive. It will also undoubtedly be a considerable time before private owners will be able to afford the airborne equipment necessary for the use of the complete ILS including the glide path. Their VHF range receiver will be, however, suitable for use on the localizer so that with accurate altimeter, possibly ADF and field and approach lighting, this combination would permit very substantial steps toward reduced visibility landing.

To achieve real all-weather flying, the associated problems of traffic control and collision avoidance in congested areas remain to be solved. Proper solutions of these are tremendously difficult, even in scheduled air carrier operations. Yet, it does appear practicable by means of electronic aids to make it possible for the private owner to fly more than 90 per cent of the time, on the average, which should greatly enhance the usefulness of personal aircraft and substantially remove weather delays as a deterrent to the prospective purchaser of an aircraft for private use.

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Regulations

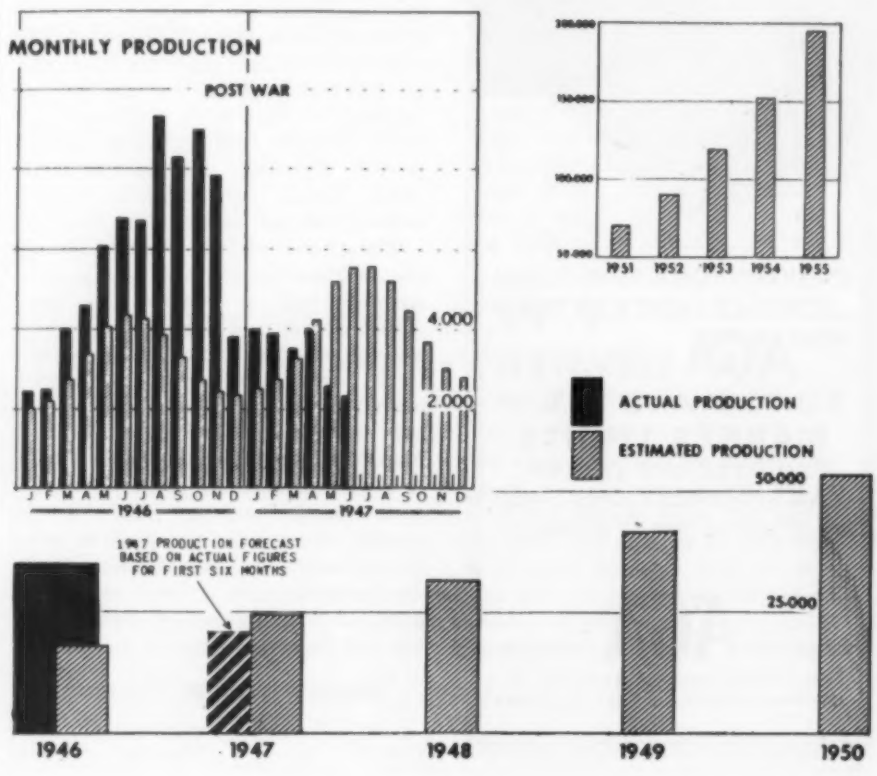
Although there are still present in our regulations some requirements to which some people object, we feel we are now moving forward in the direction of relaxation as rapidly as the safety record permits.

Conclusions

I have tried to indicate the immediate need for additional utility of the vehicle itself, which includes not only performance characteristics but also reductions in initial and operating costs. With added utility a benevolent spiral of increased production and reduced price will result. On the assumption that the basic want or desire for flying is present in a very large number of people with the ability to pay, it appears that this spiral will result in a will to spend which will produce the predicted increase in importance of the personal aircraft field.

Fig. III shows actual civil aircraft production with reference to our forecast. The degree to which the estimate was exceeded in 1946 is obvious. Production for 1947 will fall short of the estimate by a small margin, but the overall forecast for numbers of certificated aircraft is so far ahead, by virtue of the 1946 production, as to give time to develop new models with increased utility so that production can expand without ever falling below the forecast curve. ★ ★ ★

Fig. IV. Actual civil aircraft production and estimated production are compared in this Civil Aeronautics Administration chart. CAA estimate is based on an annual registration increase of 30 per cent, a 20 per cent replacement (5-year life) and an export market requiring 25 per cent of annual domestic production.



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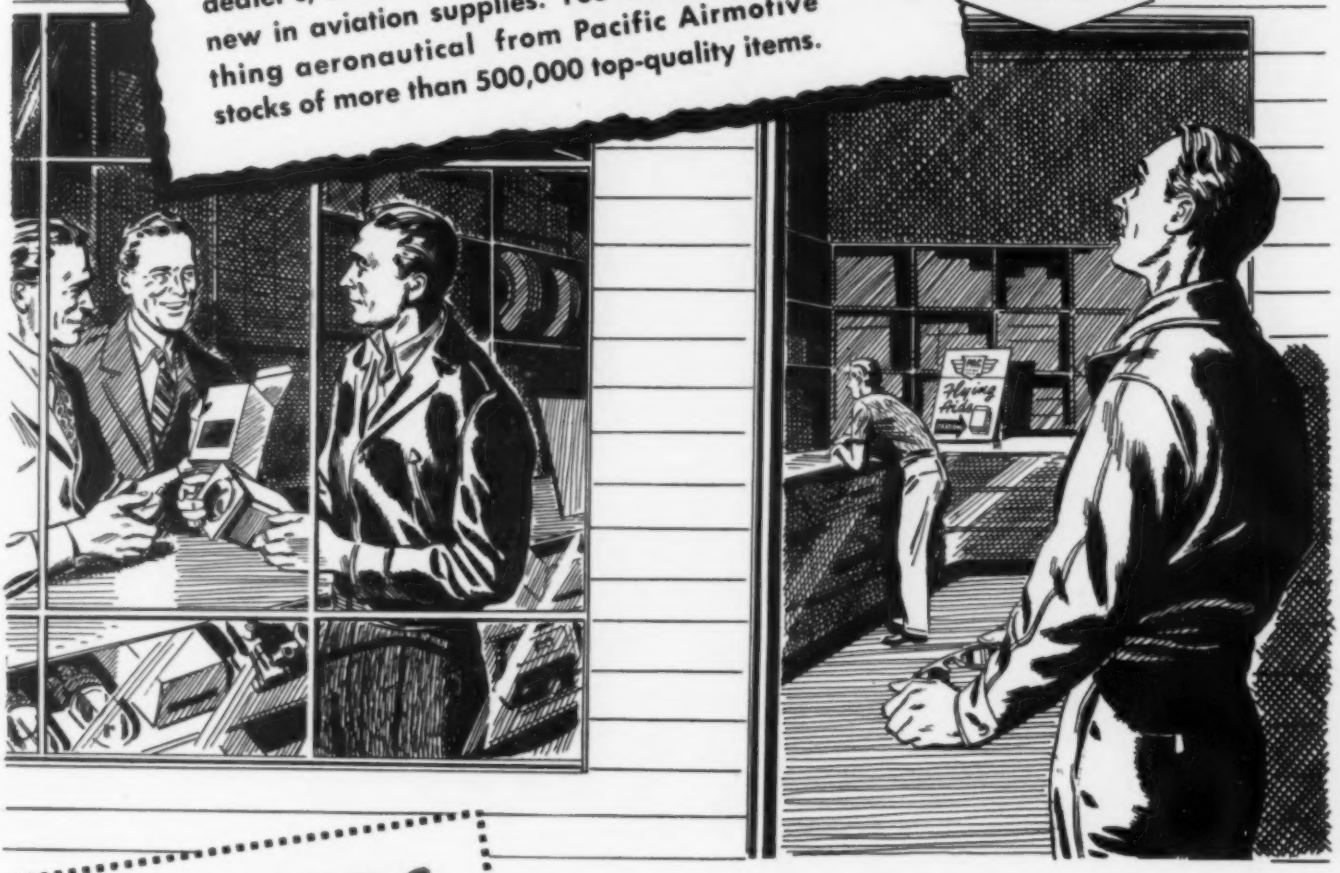

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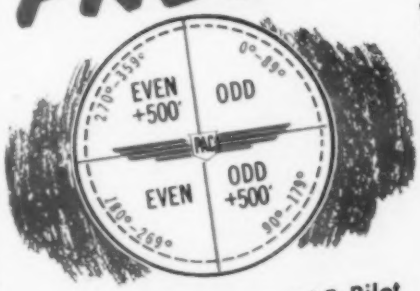

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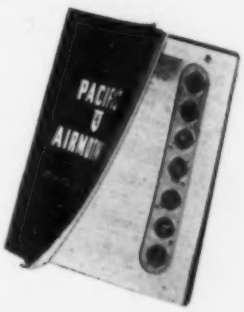

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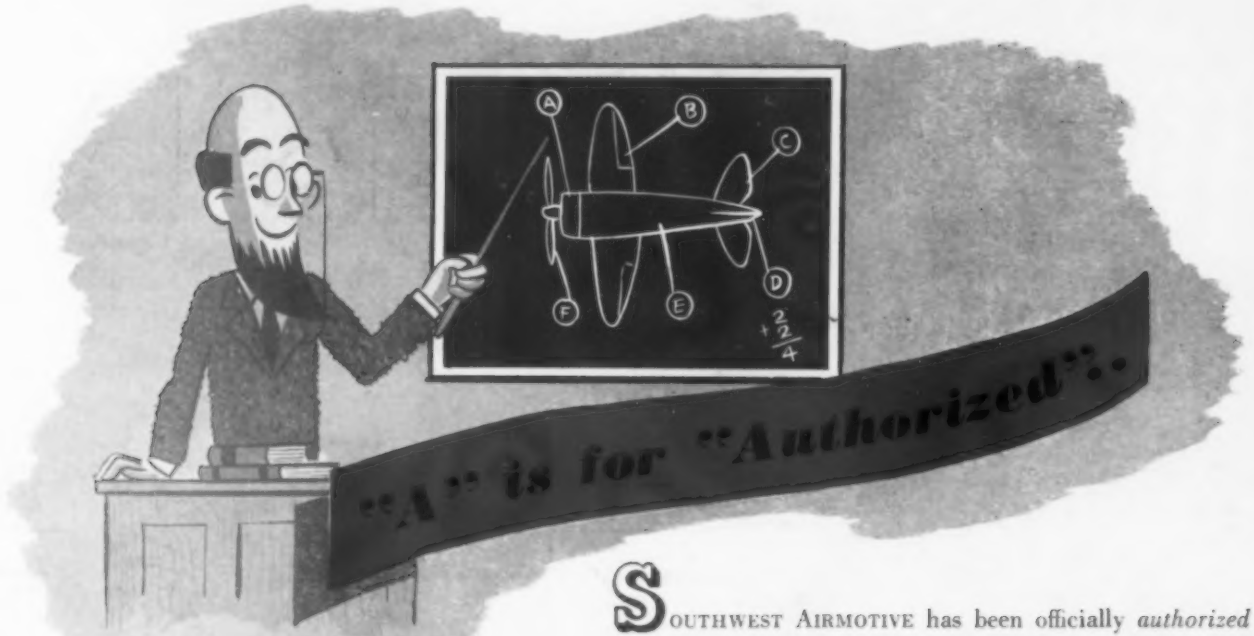

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